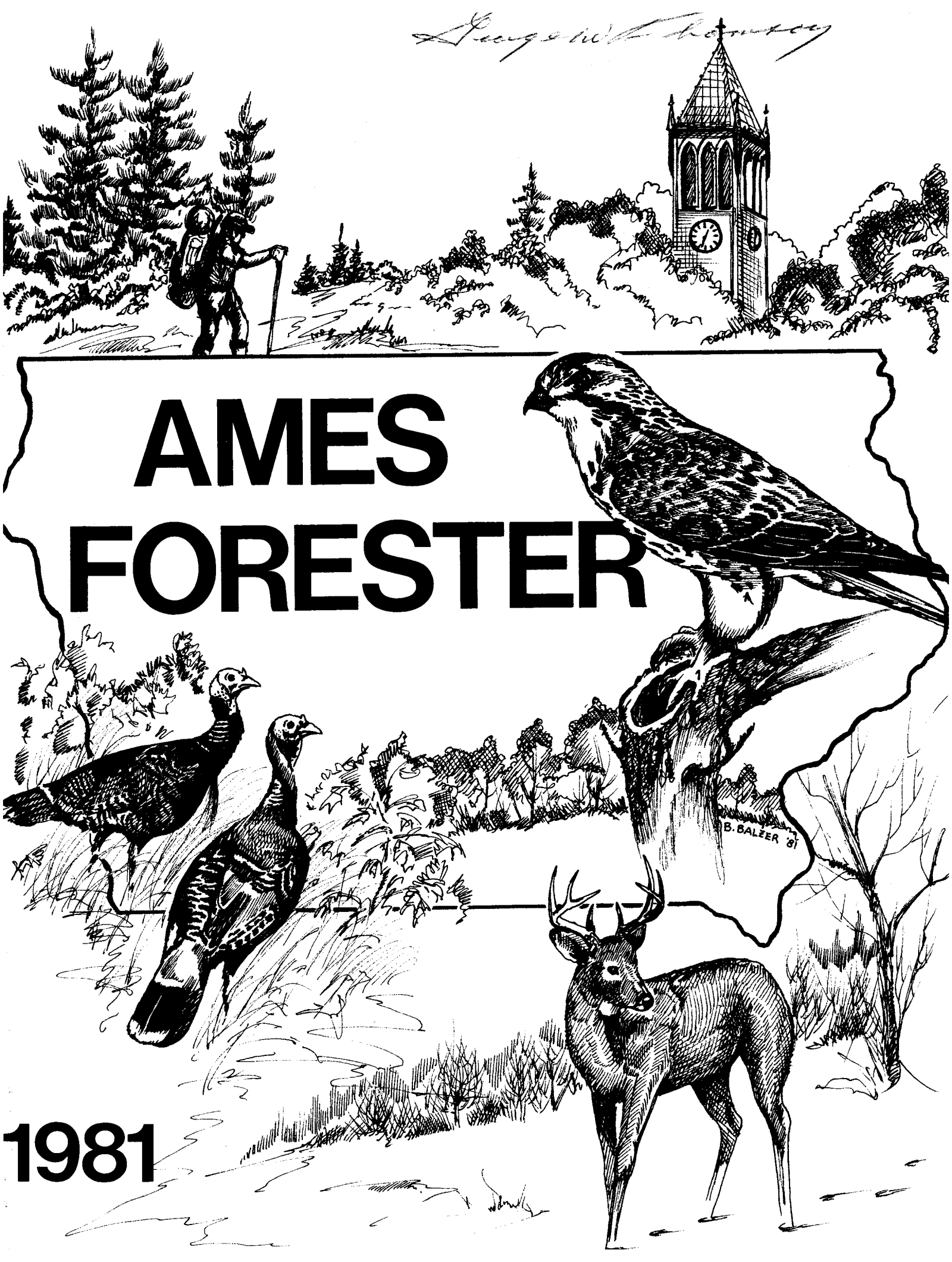
Volume 68 Article 1

1-1-1981

Ames Forester Vol. 67

Ames Forestry Club



AMES FORESTER

1981

Generous support makes this publication possible

1981 PATRONS

Arthur W. Abbs
Margaret S. Abell
Raymond V. Adolphson
Raymond E. Anderson
Bob Appenzeller
William H. Arlen
W. D. Arnold

Donald R. Ball
James C. Barnett
Fred C. Battell
Chuck Beatty
Bruce M. Bebensee
Lad W. Belehrad
R. A. Blaser
James T. Blott
Steve Boody
William H. Brandau
Robert Brisbin
Jon Bugenhagen
Thomas E. Burk

Elaine Sue Caldbeck
Dick Chance
Russell L. Chipman
John I. Christensen
Michael J. Cloughesy
Lauress C. Collister
Gilbert L. Comstack
H. C. Freeman Cook
Charles J. Coyle
Carl K. Crane
Jack Crellin
C. R. Crowther
Vern H. Cutler

Michael J. Dawson
Dick DeBower
Frank DeVaul
Albert F. Dodge
Warren T. Doolittle
Keith W. Dorman
Lee W. Dowd
William A. Duerr
Paul M. Dunn

Lawrence J. Ehlers
Glenn H. Ehrlich
D. W. Einspahr
Col. Marlon Ellison
Palmer Erickson, Jr.
Robert Ethington
Stanley Ewanoski

C. Eugene Farnsworth
Bert Fellows
James E. Ficke
Roger Fight
Gary F. Firch
Roy R. Fisher, Jr.
James Furnish
Rev. David Fye

Russell E. Getty
Dean H. Gjerstad
W. Duncan Giffen
John C. Gordon
Roger R. Gordon
Kurt W. Gottschalk
R. B. Grau
Phil D. Grimes
Harry L. Grove

Steven C. Hagman
Richard B. Hall
Howard G. Halverson
Leland F. Hanks
Wendell H. Harmen
George B. Hartman
Michael B. Hathaway
James H. Haygreen
E. F. Heacox
Kirsten Held
Charles Henry
Gene Hertel
Grover R. Hertzberg
Donald E. Hilt
Gary Hilton
Jack B. Hogan
Clark E. Holscher
Clyde C. Hoover
Fred S. Hopkins, Jr.
Lowell E. Horton
Robert N. Hoskins
Jennings D. Hotchkiss
David C. How
Benjamin D. Howells
John W. Hubbard
Roger F. Hunziker
Donald L. Husman

David M. Ilch

Lyle E. Jack
James L. Jayne
Lt. Dave Johnson
Glenn R. Johnson, MD
H. C. "Chuck" Johnson
Marlin Johnson
Robert C. Johnson
Robert E. Jones

David W. Kaney
George W. Kansky
Michael R. King
Theodore F. Kouba
Curt Krambeer
Gary Kratz

Richard D. Lane
Jervis Lang
Donovan Larson
M.D. "Pat" Larson
Laurence Lassen
Steven C. Lewis
Wayne C. Lewison
Kenneth E. Libby
John R. Linch
Gregory T. Linn
Peter L. Loro, Jr.
Howard S. Lovestead
Howard E. Lowe
Donald R. Lubberts

Tom Martin
James A. McIntyre
Fred W. McMillan
Harold S. McNabb, Jr.
Robert Meier
Roger W. Merritt
Gene C. Meyer
Russell E. Meyer
Hans Christan Milius
Milan Millar
Norman R. Miller
Ralph R. Miller
Ned D. Millard
Carl Mize
Ronald A. Moss, MD
Franklin H. Mullen
Robert J. Munger
Hilton Muntz

David K. Nelson
Dewitt Nelson

Kenneth D. Obye
Gene Onken

Richard W. Paris
Darrel F. Parker
Lloyd M. Patterson
Chas J. Petersen
Todd Phillipe
G. D. Pickford
Del Ploen
Richard D. Popp
George I. Porter
Bob Proctor

continued on page 2

The 1981 Ames Forester Volume 67

Published by the ISU Forestry Club

Iowa State University

Ames, Iowa

CONTENTS

PATRONS—*continued from inside cover*

Robert L. Quade
Arthur F. Quirin

Don E. Rawlins
Eugene H. Readinger
R. S. Rehm
Jules S. Renaud
Eugene E. Reynolds
John P. Rhody
Dean Richardson
Hugo W. Richman
William Rice
John M. Ritchie
William B. Rozeboon
R. S. Bacon Veneer, Co.

Neal Saul
Con H. Schallau
Charles J. Schissel, MD
Ralph A. Schmidt
James (Duke) Schneider
W. H. Scholtes
Richard C. Schultz
Terry J. Sexton
Harold Simpson
Clyde T. Smith
Dr. David Wm. Smith
Joe Smoke
Elbert W. Spencer
Mel Spies
Donald H. J. Steensen

Gil H. Stradt
Nancy & Doug Sturhan
R. G. Suder
C. Svendby

Donald E. Thomson
George Thomson
Charles Tice
J. Tomascheski
Robert R. Tyrrel

Hans G. Uhlig
Bradley A. Upfield
Harley R. Urbatsch

Douglas A. Valley
James L. VanDeusen

Arthur L. Wallace
Rick Walter
Bill Warner
Charles W. Warren
Douglas K. West
John R. Wilson
John R. Worster

Dave Young
Mas C. Younkin

Kurt Ziebarth
Eliot W. Zimmerman

Editors—
Jody Nelson
Jo Ellen Mueller

Business Manager—Randy Reutzel

Photography—Kris Holt

Artwork—Edward (Buzz) Balzer

Staff—
Marietjie Burger
Linda Gray
Anita Montag
Deb Steig
Karen Young
Dave Vales
Kelley Peters
Priscilla Licht
Reinee Eshelmann

Advertisers

Forestry in the Midwest
1981 Ames Forester

Editors: Jody Nelson and Jo Mueller

EDITOR'S NOTE:

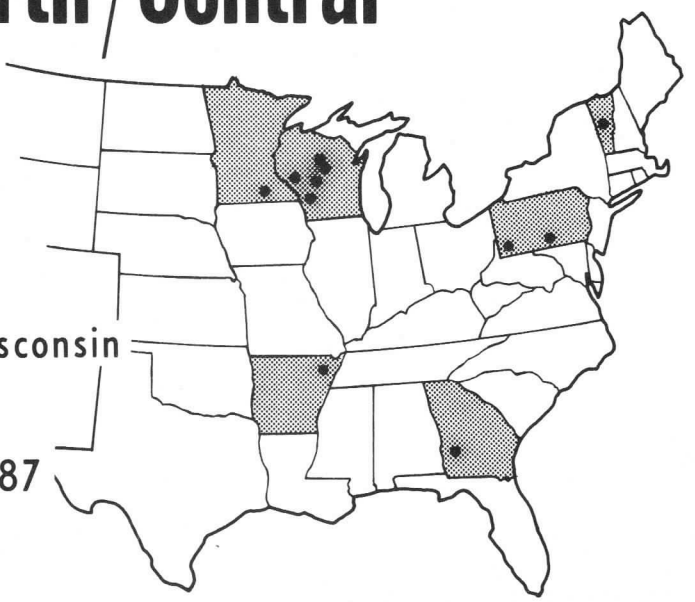
We've heard it so many times. It's that same old line . . . the one you inevitably hear as a forester at Iowa State, "Are there really forests in Iowa?!"

This time we would like to answer that question with a resounding *yes*, through the pages of the 1981 Ames Forester. In this year's issue we have explored several aspects of Iowan and Midwestern forests. Included are discussions on past and present forest conservation views, the Iowa forest community, recreational use of midwestern forests, and a newly developed street tree program for Iowa cities and towns. Also included in the '81 Forester is the regular up-to-date news on the department, staff, students, and student activities.

Again this year this publication could not have been possible without the help of many special people: the '81 AF staff, our generous patrons, our contributing authors, our loyal advisor Dr. Thomson, and the patient staff at ISU University Press. To all we give a hearty Midwestern thanks!

Now, read on!

North/Central Region



P. O. Box 271
Schofield, Wisconsin
54476

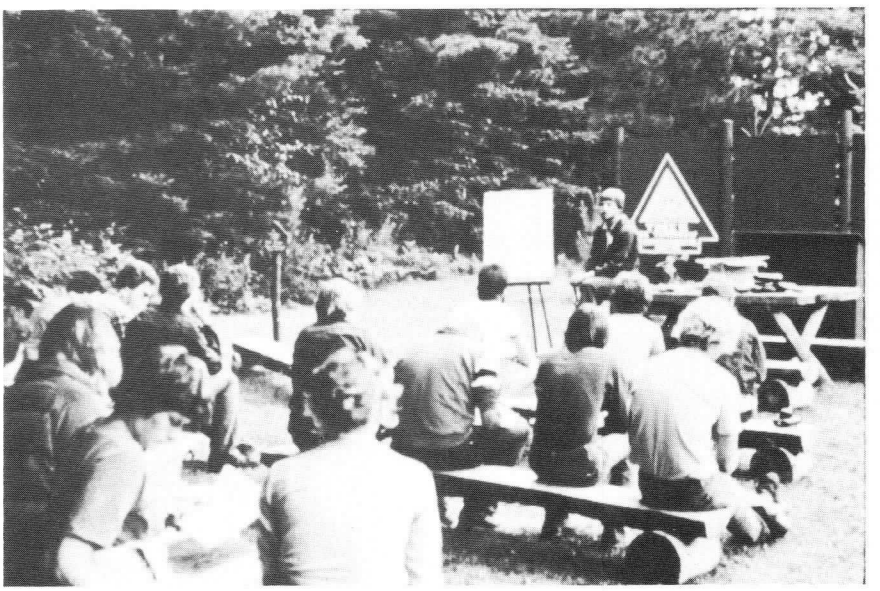
(715) 359-7287

West Memphis, Ark. - Hardwood Plywood
Adel, Ga. - Particleboard
Albert Lea, Minn. - Laminated Products
Jefferson, Pa. - Hardwood Veneer
New Freedom, Pa. - Hardwood Veneer
Hancock, Vt. - Prefinished Paneling
Marshfield, Wis. - Hardwood Doors
Onalaska, Wis. - Hardwood Lumber
Prairie du Chien, Wis. - Hardwood Lumber
Rothschild, Wis. - Pulp and Paper
Schofield, Wis. - Region Headquarters

Weyerhaeuser

1981 Ames Forester dedicated to

The Trees for Tomorrow Four Seasons Environmental Center



The Trees For Tomorrow Experience

by Linda Gray and David Vales

AS high school juniors, we had interests in pursuing an outdoor related career. However, not until attending the "Trees For Tomorrow Workshop on Forestry and Related Natural Resources" did we decide on going into the forestry profession. The week long workshop served to dispense the stereotyped "Forest Ranger" image often held by many people. Forestry was shown to be involved with many aspects of the outdoors, encompassing all phases of multiple use.

"Trees For Tomorrow environmental Center" is the site of the annual Forestry Workshop held in conjunction with Iowa State University, University of Illinois, and the University of Wisconsin. The center is located in the heart of the northwoods in Eagle River, Wisconsin. Sixty high school juniors, twenty from each state, are chosen by the participating universities to attend during the summer. Students selected must be in the upper 25% of their junior class, and be seriously considering a career in natural resources.

Some of the topics which we were exposed to in the limited time we were there included; forest ecology, forest soils, wildlife, forest insects, and diseases, and products. Our learning experiences came in the form of field trips to paper and lumber operations, a Christmas tree farm, a nursery, and a Forest Service research facility. Also included were outdoor field labs on tree identification, soil identification, compass traverse, forest measurements, and interpretive ecological hikes. Classroom instruction was another important part of the total learning experience.

Although most of our time was filled with educational experiences, we still had plenty of time to engage in social activities with our peers. Volleyball, football, canoeing, and other leisure activities offered opportunities to get better acquainted. The culminating highlight of the week was the lumberjack contest where we got a chance to prove our forestry skills in log chopping, log rolling, two person bucking, and bolt throwing.

For many it was their first time in the northwoods and their first exposure to forestry. The workshop also gave us a first time opportunity to talk to university professors and get an idea of where to attend college.

How many actually go on to pursue a natural resource career? We are not sure of the actual statistics, but for some, the workshop is the deciding point leading to their careers.

After attending the forestry workshop, we feel we have gained an invaluable learning experience and hope that others will get a chance to attend in the future. "Trees For Tomorrow" is one of a kind workshop, and gave us, as high school students, a chance to plan our careers through better understanding of natural resource fields. ■

Professional Articles

Forests in Iowa

This article was written in 1897 during the first wave of "conservation" in America. McBride notes many problems facing Iowans as acres were converted from woodlands to pasture and cultivation. In only a decade they hoped for a great improvement in Iowans' sentiment towards forest maintenance and preservation. It has been 84 years and the fight continues . . .

by Thomas H. MacBride

AS is well known, Iowa was when first settled essentially a prairie State. There were wooded areas, but these were generally disconnected and limited to particular regions, such as the banks of the perennial streams, clay hills, sandy and rocky ridges. The spread of timber was prevented by prairie-fires. Where the grass was heavy these were excessively hot, so that trees could maintain themselves only where the grass was scanty; that is, where the soil was thin or barren. Moreover, the trees were for the most part scattered. As far as trees were concerned, one could drive or ride anywhere through the primeval woods of Iowa, except, perhaps, immediately along the borders of streams. The greater number of the trees were old; they were low, often scrubby, storm-tossed, often scarred by fire, of little value. In fact, it is believed by some that prior to 1850 the forest in Iowa, such as it was, was actually retreating, dying out, before the stress of fire and storm.

However this may be, it is certain that the coming of civilization by checking prairie fires was for Iowa woodland immediately and greatly advantageous. True, there was immediate demand for lumber and fuel. The earlier laws compelled the settler to fence against all the cattle of the prairie, and the primeval trees furnished his only material. But in those days water power furnished the only energy for driving the saw; mill sites were far apart, and lumber-making was slow. Moreover, in a very few years, Mississippi rafts brought to the shores of Iowa quantities of Minnesota pine, so cheap that it did not pay to cut the native timber, and the primeval oaks obtained unlooked-for respite—a new lease of life. Those that remained availed to furnish seed, and under the new conditions the forest began to spread, and in the twenty-five years succeeding 1850 became totally changed. What was called "second-growth" sprang up everywhere. The old trees were soon completely lost in the crowded ranks of their descendants, which, unvexed by fire, and mutually assistant, grew with amazing rapidity, so that it was a common and true remark among men long resident in the state that there were in Iowa more trees than ever before. The fact before mentioned that the trees were confined to inferior soil tended in the same direction, and the woodlands of Iowa, undisturbed, and reckoned worthless, fortunate condition of affairs until a few years ago. From about 1878 on, the rise in the value of agricultural lands, the increased demand for fuel, and, above all, the invention of barbed wire as a cheap and convenient fencing material, all combined to the destruction of all hopes which any may have fenced for pasture fields; when the trees were cut off herds of cattle prevented forest renewal. About the same time the rapidly rising price of Minnesota pine reached a point where it once more became profitable to saw native lumber, especially by aid of the portable steam sawmill; so that all the old trees have at last been cut off and sawed up into bridge lumber and railroad ties; and the prospects now are that within a few years every vestige of Iowa woodland will be converted to agricultural use. Much as we deplore the loss of our forest, with all its beneficent influence, with all that it contributes to human weal, the case would not be so utterly bad were it true that the removal of the forest gave place to other valuable harvest. This is, indeed, true in some places. The rich bottom-lands when cleared make in some localities fine farms, and the gentler slopes among the hills of sand and loess make fine blue-grass pastures, but in the vast majority of cases neither of these conditions obtains. The woods cover rocky knolls, sand hills, steep hillsides of yellow clay; in fact, land that is otherwise worthless. The thin deposit of rich soil caused by the decay of leaves through long preceding years soon washes off, once the trees are removed, and the land from which the farmer hoped at least grass for his cattle washes after a year or two in gullies, whitens to bare rock, or at most grows up in thistles and weeds that can thrive in the most inhospitable localities. Added to these unfortunate conditions, we must record the fact that the past few years in Iowa have been seasons of remarkable drought—a drought so severe as to destroy, not tillage crops only, but in some places indigenous vegetation of every description. Even arboreous plants did not escape. Our native forest trees—oaks, hickories, ashes—have been killed in midsummer, hundreds of them, particularly the "second-growth" by the general deficiency of moisture. Taken altogether, the prospect for our Iowa woods is discouraging in the extreme. The only hope of preserving any of our primitive forest area lies in the possibility of stirring the intelligent sentiment of our people. This is the more difficult from the fact that Iowans are accustomed to boast that every acre of Iowa land may be made subject to tillage. This, of course, is not true. There are thousands of acres that should never be tilled at all. Nevertheless, there are many men ready to try the experiment, as if to make good the supposedly patriotic boast. If the woods are all swept away, the time will probably soon come when much of the land they cover will be re-forested, but by herculean labor.

As an offset to this somewhat hopeless, or, at least, despondent side of the picture, it may be said that there are today in Iowa thousands upon thousands of groves planted by famers for the protection and shelter of their homesteads. The groves are generally of comparatively worthless species of trees, but, nevertheless,

continued on page 12

The prairie grove revisited

Woodlands in the midwest have gone through a transitional period since the settlers first came through. At first they were of utility, then of nuisance in clearing the land for farming and finally of value created by aesthetic awareness and scarcity.

by George W. Thomson

CONSIDERING my origins as a farm boy preceded by four generations of ancestors who had lived on the same land and considering my professional career as a forester and teacher, it is not suprising that I see the theme of this symposium as a vehicle to support my ponderings of that heritage of the underprivileged—the farm woodlot or the prairie grove. I have been long intrigued by the transition of the midwestern woods from a position first of utility, then of nuisance and finally of value created by esthetic awareness and scarcity. This short paper will focus on a wooded farm in the Midwest and portray some aspects of farm life where agricultural productivity and the intangible merits of the woodlot come together.

But once embarked on the task of putting my thoughts together, I faced several difficulties: (1) Hamlin Garland, describing his boyhood on the Middle Border in 1874 (60 years before my own equivalent stage of boyhood), saw his youth and the land not much differently than I and he wrote it down much better than I can. (2) I suffer from the one-case induction method in framing my thoughts, and generalizing from one's own vivid experiences lacking scholarly technique. (3) Scanning the program, I find myself singularly alone in this gathering of humanists. If I am to play the role of the token rustic, we are all in a lot of trouble.

Among farmers I am considered a school teacher; among educators, I am considered a lumberjack; among lumberjacks, a forester; among foresters, I am sometimes considered a philosopher, but among philosphers I shall be exposed for the hornbook eqigram quoter that I am. I am properly ill at ease. As Lyly wrote: "—so the traveler that straggleth from his own country is in a short time transformed into so monstrous a shape that he is faine to alter his mansion with his manners, and to live where he can, not where he would."[1]

Washington Irving identified another worry to all of us who would portray a place or a time; "I fear I shall give equal disappointment with an unlucky landscape painter, who had travelled on the continent, but following the bent of his vagrant inclination, had sketched in nooks and corners and by-places. His sketch book was accordingly crowed with cottages and landscapes and obscure ruins; but he had neglected to paint St. Peters, or the Coliseum, the cascade of Terni, or the bay of Naples; and had not a single glacier or volcano in his whole collection."[2]

Assume, as a beginning, that we who pursue tillage, from which the other arts follow, are not completely insensitive to our surroundings. Observe, for example, that look of absolute contentment on the face of even a farm dog, when he sits on the front porch after breakfast, lookng out over his domain. Recognize that *income* is derived from the productivity of the land. Recognize, further, that the quality of one's life as a land manager-farmer is a function of:

- —the intelligence and daring of the operator
- —the level of technology available
- —the capital and labor resources at hand
- —the physical health of the on-site entrepreneur
- —the random distribution of weather
- —the owner's internal aspiration for the attainable things
- —a "spiritual" awareness of and appreciation of the physical world around him.

Since I am no longer directly of the land, I have to look back to my youth and try to see myself in my father. I realize now that I view him as a slightly mystic figure of a philosopher deprived of an education—an explorer confined first to narrow geographic limits imposed by the number of railroads that a young boomer telegraph operator could work on and later by the constraints imposed by just how far away one could get from home when cows had to be milked twice a day and where weekends differed by weekdays only in that one could go to town Saturday night and "watch haircuts".

My youth as a third and last son can be defined as hard-working but sheltered. Those weren't my banks that went broke in 1930—it wasn't my herd of dairy cows that was wiped out by Bang's Disease inspectors—it wasn't really all that serious to me to observe that our net income one year was negative $600—it didn't really strike me that Franklin Roosevelt was destroying the self-sufficiency of farmers. I wasn't the one who had to build the straw stack in front of the blast of a threshing machine where one breathed the concentrations of ragweed pollen and the smut of molding oats left too long in the field due to August rains. I didn't have to cough black for two days after. The prehybrid tall corn that had to be lifted out of frozen-down shocks by a man that never weighed more than 160 pounds was not mine to lift. Yet, here was a man that maintained a mowed lawn a full acre in size, raised over 50 kinds of tea roses and wouldn't sell living trees from our woodlot and subscribed to magazines other than the *Farm Journal* and *Wallace's Farmer. Saturday Evening Post* may not have been the *New Republic* and Alexander Botts and the Earthworm Tractor Company may not have been *War and Peace,* but both were a cut above the norm.

If some awareness of the esthetic segment and the humanistic values was so deeply rooted in my farmer-father that the debilitations of an ulcer, hemorrhoids (that plague of

the working man), and ultimate death by emphysema that 84 years of dust couldn't grub out, then it's fair to say that agriculture and esthetics can coexist in the most ordinary of people.

I find it challenging but difficult to collate my romanticized notion of my ancestors as they settled on farms in Illinois with my current ideas of agriculture and humanities. Did my ancestors really feel a spiritual kinship with the land or do I just transfer my latter day and cultivated awareness back to a time when it was felt that agriculture was the *talking about* but farming was the *doing*? More disconcerting still is the question: Would I, or you, with new-found prosperity and lives of considerable ease, be as tenderly concerned as I am now for the environment if I suffered from malaria, milk-sick, and mastoid infections while hand-milking twenty cows twice a day? When tillage begins the other arts follow—but generally at some distance back, out of the dust.

Among those of us with middle-class security has spread a cult that reverse primitive things, and despite a fair amount of artistic sophistication there seems to be a scenic naiveté that leads us to demand ever-more vast panoramas of space set aside for our wonderment. In a short, we yearn for a wilderness experience that our predecessors dreaded.

A night flight over Iowa in a small plane gives the impression that the whole prairie is a city with porch lights burning, for at even 5,000 feet the yardlights at quarter-mile intervals seem to illuminate the entire land. But I can easily remember the pre-REA days when one went to bed when the Delco batteries ran down, and I see again how devastatingly dark my upstairs bedroom was and hear how the windmill so eerily moaned on dark nights when the wind shifted. I shudder yet at the pirmal fear engendered by the dark and the uncanny effect of stair treads returning to position on a cold night in the exact sequence in which they were depressed as I went upstairs to bed. The effect of a huge and slow-moving night walker that climbed the stairs and stood breathlessly outside my door was overwhelming. Absolutely without external conditioning of any kind I was aware of primitive horror and knew then how great must have been the compulsion of early settlers to clear the dark and crowding forest from around their door yards. They said it was to clear hay land for the horse they had to have in order to clear crop land, or they said it was to clear a field of fire to keep away marauders, but reread Conrad Richter:

> "All she knew was the ever forest where the roads were dim paths coaxing you to come on while the monster brown butts stood around still as death waiting for you to get lost. All her life she lived in the woods, yet still she wasn't of the woods and still the woods were against her. Oh, it had evil things in the woods that were older than the oldest man. The woods shut you in and fought you while you lived, and sucked up your flesh and blood with its roots after you died.—Not that she listened long. Everybody was talking to some other body. When they got through, they would talk to somebody else. And when they had no more talk they just stayed and listened to others talk, for it would be a long time till they had meeting again, and all were loath to leave each other for the lonesome woods".[3]

I've suspected for a long time that I am a domesticated version of my ancestors. I don't suppose that I really want wilderness on a 24-hour basis—dawn to about 3:30, maybe, but than lead me back to my stable for I am a daytime Druid. I'll leave it to other stags at eve to drink their fill where dances the moon on Monan's rill. I'm convinced that the call of the West would have been too weak for many of us. Most people seem to prefer Wilderness as a sort of nondenominational cathedral or a place to carry on an acceptable pursuit of hairy-chestedness until one's granola runs out. True wilderness can be visited but it's no place to stay—it simply can't be tolerated for long until it is housebroken, gleded, and the wildness driven out.

Yet the forests of the Midwest were much sought after and when my New Hampshire great-grandfather brought his wife and her parents to northern Illinois, they settled immediately on the roughest, woodiest, most New England-like farm they could find on the southern edge of the Twelve-Mile Grove in which I grew up. There wasn't a day that I didn't feel gratitude to my ancestors for picking such a boy-awarding site—and my Dad never forgave them for picking such a hard-to-farm. The latter day emigrees had nothing left when they arrived but rich, deep prairie soils. They prospered mightily and begat rich sons and grandsons whose children have populated the earth while the Thomsons have faded and retreated to become chemists, bankers, and school teachers.

But, afterall, the prairie groves sheltered one from the wind, and provided fuel, and if the site was good enough, and thus the trees tall enough, one's log cabin could be longer and wider than that of one's neighbors. The popple clumps—called towheads, grew in the wet pastures and at the edges of woods, and its members were long and slim enough to provide rafters for the barns—and these, along with the walnut sills, can still be found in the 100-year-old barns near woodlots. And the groves had a sound to them and a shady look to them that was more homelike than the sameness of big bluestem—*"To one unaccustomed to it"*, wrote Washington Irving in *A Buffalo Hunt, "there is something inexpressibly lonely in the solitude of a prairie. The loneliness of a forest seems nothing to it. There the view is shut in by trees, and the imagination is left free to picture some livelier scene beyond. But here we have an immense extent of landscape without a sign of human existence. We have the consciousness of being far, far beyond the bounds of human habitation; we feel as if moving in the midst of a desert world."*[4]

Except in the Garmanic communities no real attempt was made to save the forest for esthetic purposes, either for the citizens of a century ago or for us who choose to recreate in woodlands. The woods followed the streams and intermittent drainages, and seldom ventured up from the slopes onto the level land where periodic prairie fires perpetuated the grassland and withered the invading forest. Thus, there was little desire to clear forest for cultivation when the prairie, while obdurate and at first brutal to plow, could be cultivated with so much more success. Yet, the forest *was* cleared, partly for heating (a big farmhouse by 1880 or 1890 could gobble up 12 tons of coal or 24 tons of wood). In the north-to-south forties that made up the average farm one would seldom expect to find more than 20 or 30 acres of woodland and the 12 cords of wood would just about be the annual increment from such a woodlot. So the forest was continually losing its older and bigger trees to the furnace and cookstove and replacing them with their progeny or at least those trees that could invade the shade of their elders. So the forest was always there but always changing—not because of a desire to perpetuate it, but simply because, for awhile, demand and supply were in balance.

But the balance didn't last long because the railroads were already to the Mississippi by the Civil War and were ready to create the cattle towns across Iowa, Missouri, and Kansas; and the oak forests fell by the thousands of acres to provide ties and fuel. Nowadays, a 12-inch oak tree is approximately 100 years old, and seldom could one get more than two ties per tree. Thus, with 200 trees per acre, or 400 ties per acre, it would take between 35 and 55 acres of woodland to build a mile of track.

It's odd that the diaries of the early settlers don't comment on this passing of the forests, for the evidence of the tree rings is there to see; but no one ever sees a tree grow and perhaps the activities of tie-hacks and wood cutters were so commonplace from the beginning and so widely distributed, and perhaps provided for so welcome an opportunity for field and pasture expansion that they simply weren't worth comment.

But the clearing to bare soil a hundred years ago gave us back the oak forests that are once again old—and just in time for us, with our newfound esthetic sense and leisure, to enjoy them and worry over them as they teeter on the brink of their second-growth senility.

But the Prairie Grove has attached itself to my memories as the focal point of my own early contemplations which led to wonderment and fulfillment that I found echoed in my one-room country school by earlier men: "My heart leaps up when I behold a rainbow in the sky"—and "I wandered lonely as a cloud that floats on high o'er hill and dale"—and "The cattle are grazing their heads never raising, there are forty feeding like one".

And this feeling must have been experienced by all farm people to some degree. My woods had been the location of Old Settlers' picnics from the beginning. One simply didn't picnic on the prairie if there were any alternatives.

To go to the woods was adventure and surcease from labor, not only for squirrel hunters and mushroom hunters but for the 20-year-old girl country school teachers who could take all eight grades at once, 20 of us, and go on bird and bee hunts, as this one-half day a year unit on nature appreciation was commonly called. Only getting off at 2 p.m. Friday to rake the schoolyard leaves could match bird and bee hunts as an occasion of rejoicing.

In the Great Depression, the county bought part of my Prairie Grove as a Forest Preserve to serve as a pleasuring ground, as New Yorkers had set aside the Adirondack Preserve a half century earlier. Picnicking was the main venture and commanded crowds during the 30's and 40's that haven't been matched since. We country people were astonished at the vast number of toilets that were built.

A swimming-beach was made out of a bend in the creek and that little sluggish, cow-polluted, leech-infested pond swarmed with people for a few years until the forces of sedimentaiton reclaimed the channel and giant ragweed reclaimed the shore as the popularity of the park declined. People began to travel more widely and the dolomite bluffs were dwarfed by the Wisconsin Dells and then by the Black Hills and then by the Tetons and at last by the Alps as each in turn was made accessible. The hand-operated pump, the outdoor toilets, the absence of golf courses, the lack of trails through the no-longer grazed underbrush and surely the competition from new and better managed parks brought about an end to the popularity of that park right at the threshold of the environmental era.

I returned to that Forest Preserve last spring, and I was all alone except for a boy and a girl with a guitar. My woods was just about like it was 35 years before except for one thing: the fence was gone between the park and what had been "our" woods, and picnic tables were located right up to the back door of the old farm house. The pressure to acquire recreation sites and the growing reluctance of the owner to keep up the woods had conspired finally to do away with the old Thomson place—this time at $800 per acre. My New Hampshire grandfather's land judgement was apparently a good deal better than mine.

I hope the picnicking, frolicking public appreciates that one black maple tree, where Maud and Bess could always be caught stomping flies in the shade when it was time to get them up for corn plowing. I hope somebody points out the shallow ditch as being the old Stage Road. I even wish somebody could visualize the fox in that glacial rock along Hilton's fence by evening light and understand how it scared me as a five-year-old boy bringing in the cows.

Parks, woodlands, and set-aside lands can do us all a lot of good; and in the worst days when the mobs are bad it pays us to remember how worthwhile they are. For a woodland needs to be worthy of its heritage by reminding people where they came from and maybe, like the primitives of Grandma Moses, make us nostalgic for times we never knew. Isn't there a sense of wonder that we need to catch more often than we do?

So I look with great interest to this symposium to see how other professionals equate the remorseless practicality of tillage with that wider view of Alexander Pope's that states: "All Nature is but Art unknown to thee."[5]

REFERENCES

1. Lyly, John. *Euphues, the Anatomy of Wit.* 1579.
2. *The Works of Washington Irving. The Sketch Book. The Author's Account of Himself.* A. L. Burt, New York, p. 9. 1900.
3. Richter, Conrad. *The Fields.* Alfred A. Knopf, New York, pp. 33 to 34. 37. 1946.
4. *The Works of Washington Irving. A Tour of the Prairies. A Buffalo Hunt.* A. L. Burt, New York, p. 112. 1900.
5. Pope, Alexander, *Essay on Man.* Epistle I.

Forestry in the midwest: *an endangered species*

Why should our forest lands be saved? The general stability in preserving forest lands by the family landowner is being threatened by property ownership turnover. A general awareness of the problem needs to be transferred from the professional field to the general public. This can be accomplished through public awareness and by educational programs in our school systems. It is a job for each of us in which urgency is critical.

by Dr. Gerald Schnepf

Background

WHY should forest or "natural" lands be saved for the future? What is the case for and why the interest in "saving" these forest and scenic areas? What motivation is there by society not to consume remaining natural lands and by the individual not to convert them to more "productive" uses? Motivational factors for society and the individual to varying motivational levels is also not necessarily the same. Society tends to move sluggishly with trends in social concern. Ten years ago the move was for environmental issues; today it is for economic stability; tomorrow? In other words, society's tendency is to respond to crisis situations (often rather late) rather than to develop a disciplined and long range perspective. Conversely the individual's ability to respond is quicker and tends to remain relatively stable over time even though there may be some fluctuation as economic conditions change.

It is the general stability shown by the individual property owner that to date has been largely repsonsible for the forest land remaining in the Midwest. A prime example of stability is the large number of "Century Farms" or properties in Iowa that have been held by the same family for long periods of time. This family landowner has become emotionally attached to the property and as a consequence tends to be less motivated by economic pressures to convert the forest or natural lands into crop or pasture ground. On the other hand, the purchaser or new owner of a tract of land is generally motivated by economic factors expressed either by productivity of the land or as an investment in anticipation of increased value (through development or its inherent agricultural productivity).

With this concept in mind, it is understandable why the forest lands are disappearing. As the long term property holder feels the pressure and need to shift from the rural setting to an urban life, property ownership turnover increases to a new less emotional owner who is almost totally motivated by short term economic factors. This shift from rural to urban has been the most dramatic in the past 20 years. It is during this same period that we have had the most dramatic property turn-over and accelerated rates of forest loss (estimated to be between 20,000-40,000 acres per year).

The reason or desire for the "saving" of forest land by the new property owner is almost totally absent as a factor in their decision over the development or management of the property. The lack of any major clear and decisive forestry and/or land use efforts in the Midwest is a clear indication that society and most individuals are not aware of or do not feel that the remaining forest lands "must be saved". We are in a consumer-oriented period. As a consequence, there is a clear lack of motivation by society or the individual to conserve forest land. This particular attitude, however, is not exclusive to protection of forest lands; it is pervasive through all resource fields from soil conservation to water management. There is little long term economic or social motivation to manage lands and waters with a stewardship ethic that will assure their presence and/or economic opportunities "for those who follow".

Motivational Strategy

We must reverse our thinking and go back to the basic issue to objectively determine the "why". Why should our forest lands be saved?

1. Define the Problem

In order to answer that basic question, we as foresters must call on the full range of professionals: landscape architects, engineers, soil conservationists, economists, etc. Based upon the input from other professionals and from the general public, we need to answer that question clearly for both society and the individual in society. The answer to "why?" must address both short term and long term considerations. With this task completed, we will have taken the first step.

2. Awareness and Education

This clear *definition or statement of the problem* must then be transferred from the professional field to the general public. This has to be done in two manners; first by *public awareness* efforts to adults in our society to obtain immediate response and concurrently by *educational programs* in our school systems for the long range impact to our future landowners and managers. A portion of our educational and awareness efforts must be devoted to developing an understanding of land rights. New concepts of land rights and stewardship should be explored and a longer range perspective encouraged for the management of property. We must start the slow process of removing from the "bundle of land rights" the right to destroy the land and resources.

The awareness and education efforts must not be oversimplified. Although initial public awareness and educational efforts may emphasize various elements, there must be a clear predetermined program for ultimately bringing these elements together for the public. Management of our environmental and natural resources is not simply a question of "saving our forest land". It is a complex and interrelated question as Aldo Leopold, an Iowa born naturalist amply stated:

"Conservation is a state of harmony between men and the land. By land is meant all of the things, on,

over or in the earth. Harmony with land is like harmony with a friend; you cannot cherish his right hand and chop off his left . . . . you cannot love game and hate the predator. You cannot conserve the waters and waste the ranges. You cannot build the forest and mine the farm. The land is one organism. The competitions are as much a part of the inner workings as the cooperations. You can regulate them . . . . cautiously . . . . but you cannot abolish them."

Almost without fail our past oversimplification of a complex problem has often resulted in dealing with one element of the problem at the sacrifice of other elements—imbalance! Our efforts at forest management and conservation in the Midwest must be related to soil conservation, agricultural production, wildlife management, water management, and economic development—balance!

We need to recognize along with other professions that our particular discipline of forestry is only one factor in a package of factors. In many instances each discipline becomes only a small factor in the midst of a wide range of factors which come together to form the complex system of resource management or mis-management.

The educational and awareness efforts developed must portray this complexity and interrelationship in order to obtain credibility and responsiveness by the individual and by society. We should never attempt to undersell an issue to the public. Short term thinking needs to be altered so today's decisions are considered not only in terms of today's economic gain but of tomorrow's economic needs.

An example of a public awareness approach is the public service announcement on page 35 (one of several developed by the Iowa Natural Heritage Foundation) prepared for distribution to the printed media throughout Iowa. Public service announcements are only one element of a much broader public awareness and educational program developed by the Iowa Natural Heritage Foundation. Other elements include: viscual public service announcements, conservation education curriculum, publication of a book entitled *Iowa's Natural Heritage,* informational dinners, brochures, and a film "For Those Who Follow".

Conservation Options

With the problem clearly stated and awareness and educational efforts in motion, our attention can be devoted to the development of optional methods of motivating the property holder to "save the forest land". What we will really be doing, if successful, is to motivate land holders to become stewards of their land and resources. Basic to this aspect is the need to shift our development of options from a single issue approach to a broad resource management concern and from a short term economic perspective to the long term economic consequences of continued mismanagement.

It is important that there be many "tools" to work with to meet the particular needs of society, landowners, and the resources. Traditional approaches such as easements, convenants, tax incentives (positive and negative), cost-share programs, zoning, land trusts and leases, and non-traditional approaches—transfer of development rights, land acquisition and resale with some of the rights altered, and product consumer's financing of conservation—need to be explored with greater vigor and with a positive attitude toward their utilization.

Summary

A clear definition of the problem, initiation of awareness and educational efforts, and the active pursuit of both traditional and non-traditional conservation options are the basic ingredients for reversing current trends in loss of forest land.

Two areas of caution—(1) There is a tendency to depend solely upon government. It is not the job of government alone. It is the job of each one of us. The largest percentage of lands in the Midwest are privately held; therefore, the need for a shared responsibility with the private sector. A partnership with government must be encouraged. This takes a concentrated effort by both parties. However, the private sector appears ready to accept the challenge. Government must also respond in a positive manner.

(2) We must not be afraid to step forward to try new approaches. The aspect of failure must not be feared but utilized as a way of improving on the next approach developed.

Government and the private sector must work towards defining its long range goals for natural resources including forest areas. How many acres of woodland are enough? What do we want this state to look like in the year 2050? If goals are once defined, specific programs can then be developed and maintained to attain these goals. These goals must be dynamic. These goals should guide the agencies or Administrative branch of government. They should also serve to guide the Legislative branch of government, the public and the private sector.

Urgency is critical. If we hesitate or procrastinate over any of the outlined steps, the question of "saving our forests" becomes academic. Forestry in the Midwest is indeed an endangered species. Unless we react with a fervor and haste symbollic of major disasters, the "species" may quickly approach extinction. ■

Gerald F. Schnepf was born and raised on a farm in Lyon County, Iowa. He obtained his B.S. from Iowa State University in Forestry and Range Management. He obtained his M.S. from the University of Minnesota in Resource Economics. Gerald has been the Chief Outdoor Recreation planner for Province of Manitoba, Chief planner for the Iowa Conservation Commission and is now the Executive Director of the Iowa Natural Heritage Foundation. Gerald resides on an acreage near Bondurant with his wife and two children.

Forests in Iowa

continued from page 7

they keep ever before the minds of our people the necessity and value of trees. Men who have labored hard to eradicate every native oak, hickory, walnut and maple from their premises have afterwards gone to the trouble to set out about their houses soft maples and box-elders! The people mean well, but they are deplorably in need of sound information. It must be said also that there is among intelligent citizens a growing interest in our problem. Men are discussing woodland reservations, rural parks, water-courses and problems of water supply as never before, and there is no doubt that if this interest can be maintained the next decade will show great improvement in public sentiment in Iowa in all that pertains to forest maintenance and preservation. ■

The Iowa Forest Community

A forest community is not just made up of trees. The forest community includes an unendless list of many diverse living organisms which have been living together since the beginning of time.

by Sylvan T. Runkel

ONE of the valuable fringe benefits that foresters and others who work in Midwestern forest have is the opportunity to fraternize with, and to enjoy the company of, a great many interesting "Natural Citizens"! The forest community is a place where the trees make up the "Who's Who" list of V.I.P.s (Very Important Plants). To the forester, trees are the "Natural Citizens" respected as the foundation of forest society. They represent the solid values of accumulated wealth!

The forest community, however, includes a remarkable combination of many diverse living organisms which have been living together and evolving together for a long, long time.

Besides birds, animals, insects and other kinds of "Natural Citizens," the forest community includes many unusual and unique plant "characters". Some of them are beautiful flowers; some manufacture special products which may have been used for medicines and drugs; some perform interesting and necessary jobs for the forest community; some manufacture foods, fibers and other products; and all of them contribute something to the community, and receive something in return. The resulting give and take, attendant cooperation and competition, has resulted in a natural community which has great stability and long life.

When the first explorers and pioneers came to this country, they found beautiful natural communities of forest and prairie—seemingly limitless in extent. These natural communities were doing something right—for they were healthy and working in harmony with the natural environment.

The natural forest, then, is a dynamic, successful working community. It is probably one of the best available models we have of a sound working environmental system which provides for the needs of the many diverse forms of life in the community and, at the same time, maintains and even improves the condition of the environment. A continuous cyclic renewal of life is constantly going on and, coincidentally, the various life forms are performing jobs that insure the continued well-being of the entire community.

For instance, it is well known that the legume family of plants have the ability to take nitrogen out of the air and fix it in nodules on the roots. This is done in cooperation with bacteria which coexist with the legumes. Natural forest legumes include trees like: Black and Honey Locust, Redbud, Kentucky Coffee Tree; and herbacious plants like: tick trefoil, partridge pea, ground nut (a vine), hog peanut; all of which can be found growing naturally in Midwest forest communities. These plants provide a continuous natural fertilizer supply to help maintain and improve community productivity. A few other plants also help out on fixing nitrogen, too such as; Alder and bearberry.

The many kinds of fungi found in the natural forest, aided by bacteria, have for many thousands of years been taking care of the solid waste problem in the forest community. The solid wastes (dead wood from dead trees—twigs, stems, leaves, fruits, roots, hulls—as well as animal and other waste products) are gradually, quietly and effectively changed from solid materials to an organic humus type of soil. When these waste products have been recycled back into the soil on the forest floor their basic materials are available for all the inhabitants to use over again. Each time this cyclic process occurs, the forest community becomes a little richer, a little better for its "Natural Citizens" and the forest community is a little more secure in its place in the environment.

In our cities, towns and other "people" communities, we have been plagued with many environmental problems—wind and water erosion, pollution of air, water and soil, solid waste disposal, liquid waste disposal, over-population and crowding, with each contributing to the general deterioration of the quality of our environment.

When we look at our natural forest community, we see a community that has encountered similar problems—way back before the dawn of human history—and it has, in the evolving ecological relationships of the natural developing system, worked out the solutions which were needed for it to be a healthy, environmentally suited community.

Of course, the key to making the natural forest community system work is the modest little chlorophyl molecule—the basic constituent that makes all natural communities possible.

The chlorophyl molecule runs on solar energy and does so without noise or chemical pollution of the environment; actually improving the air by adding oxygen. In the process of photosynthesis solar energy is converted into other forms so that this stored energy becomes the foundation of all life.

It is interesting to note that while today there is a great effort expended in trying to find ways to develop and utilize solar energy, millions of years ago the chlorophyl molecule had already worked out the way to do it—on its own, or was it? Like many other things found in the world of nature the workings of the chlorophyl molecule seems to be more than a successful process. It seems that it is the independent wisdom of nature itself, an innate wisdom that is found throughout Nature so that individual life forms can survive and prosper.

Within the last few years forest and other natural communities are being increasingly recognized and used in our educational system to enrich and increase our knowledge of our

natural life-support systems. Such knowledge should help us work with nature in improving our use and management of our natural resources.

More and more grade schools, high schools, colleges and universities are acquiring, developing and using outdoor classrooms, outdoor laboratories and outdoor study areas. Along wth this trend, the Forest Service has set aside a number of "scientific study areas" on National Forests across the nation. Some of the more than 50 Iowa State Nature Preserves are available, under certain conditions and restrictions, for scientific study. The Nature Conservancy also cooperates with certain studies and research on some of its areas.

Many of the natural processes going on in the forest community illustrate principles that should be observed by any living community (including human communities) if they are to successfully and permanently exist in our environment.

As with any kind of community, human or otherwise, you can't tell what's going on in the forest community unless you get well acquainted with the citizens who live there.

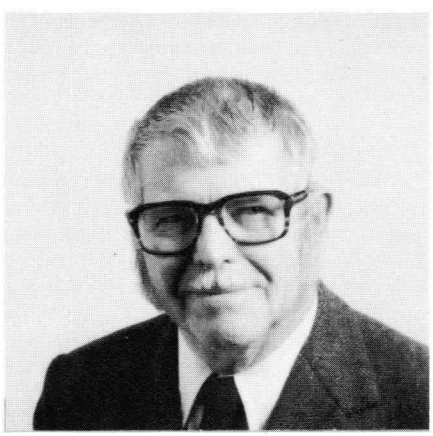
In addition to the many kinds of trees and shrubs, the following list of 100 plants (mostly wildflowers) includes a good representative found in Iowa and Midwest forest communities. Each one of these plants is a special, unique life-form that is doing its own thing, and yet is a part of a much bigger organism—The Forest Community! More information about each plant may be found by referring to any of a number of good books on the subject.

1. Skunk cabbage
2. Trillium
3. Hepatica
4. Bloodroot
5. Rue anemone
6. Toothwort
7. Spring beauty
8. Virginia bluebells
9. Spring cress
10. Twin leaf
11. False rue anemone
12. Woodland anemone
13. Dutchman's breeches
14. Bishop's cap
15. Buttercup
16. Green dragon
17. Squirrel corn
18. Bellwort
19. Wild ginger
20. Dogtooth violet
21. Blue cohosh
22. Goldenseal
23. Alumroot
24. Blue-eyed Mary
25. Jack-in-the-pulpit
26. Baneberry
27. Jacob's ladder
28. One flowered cancer root
29. Showy orchis
30. Shooting star
31. Pussytoes
32. Sweet William phlox
33. Wild geranium
34. Wild strawberry
35. Columbine
36. Violet
37. Wood sorrel
38. May apple
39. Solomon's seal
40. Sweet cicely
41. Carrion flower
42. Corydalis
43. Wild sarsaparilla
44. False Solomon's seal
45. Yellow ladyslipper
46. Yellow pimpernel
47. Beardtongue
48. Virginia waterleaf
49. Goatsbeard (Aruncus)
50. False coffee
51. Bladder campion
52. Four-o-clock
53. Indian paintbrush
54. Leather flower
55. Nightshade
56. Daisy fleabane
57. Selfheal
58. Moonseed
59. Wild leek
60. Wild yam
61. American bellflower
62. Ginseng
63. Cow parsnip
64. Fringed loosestrife
65. Bedstraw
66. Wild petunia
67. Ground cherry
68. False dragonhead
69. Fireweed
70. Harebell
71. Indian pipe
72. Lopseed
73. Milkwort
74. Monkey flower
75. Stinging nettle
76. Tick trefoil
77. Wild cucumber
78. Yarrow
79. Dayflower
80. Starry campion
81. Ground nut
82. Virginia creeper
83. Cardinal flower
84. Cup plant
85. False foxglove
86. Lobelia
87. Jewelweed
88. Joe Pye weed
89. Partridge pea
90. Woodland sunflower
91. Turtlehead
92. Horsemint
93. Bootjack
94. Rose mallow
95. Wild lettuce
96. Goldenrod
97. White snakeroot
98. Hog peanut
99. Closed gentian
100. Aster

Each member of the forest community represents values of various kinds—esthetic, economic, medicinal, environomental, rarity, uniqueness or possibly a value yet to be discovered.

The forester who is charged with the responsibility of managing a forest in such a way so as to produce "the greatest good to the greatest number in the long run" will want to plan for the kind of management system that will recognize all of the many values to be found in the forest community. Modern society needs and demands it!

The challenge is great! But what child of Paul Bunyan ever ducked a challenge? Carry on! ■



Sylvan T. Runkel obtained his B.S. in 1930 and since then he has been a member of various activities. He has been president of the Iowa Chapters of the Soil Conservation Society of America, the Society of American Foresters, and the Iowa Chapter of the Wildlife Society. He is chairman of the Nature Preserves Board and a board member of Nature Conservancy. Except for five years as a glider pilot in W.W. II, the thrust of his forty years with the federal government was conservation, mostly with the Soil Conservation Service. He now resides in Des Moines with his wife.

Recreational Use of State Forests in Mid-America

In the early years between 1920 and 1935, state forest land was not a consideration for recreational use. But since the 1930's, increased attention has been brought to the role of state forests and state parks in providing outdoor recreational opportunities.

by Ted J. Born
Former Asst. Prof. of Forestry
Iowa State University

H. Gene Hertel
State Forester
Iowa Conservation Commission

Abstract

Increasing levels and more intensive recreational use of state forests in the central United States may be threatening the quality of recreational experiences for those visitors seeking a backcountry type of environment. The size and quality of the resources of these state forests merit a management approach that will effectively maintain backcountry recreational opportunities in a region where alternatives to those opportunities may be scarce or nonexistent.

State forests provide a potentially wide range of natural resource recreation opportunities, but heavy recreational use of these areas is of relatively recent origin. Between 1920 and 1935, when most acquisition of state forest land occurred, recreation was not a consideration in the establishment of state forests. Many states established state forests to supply forest products to citizens and industry, to provide game and fish sanctuaries, and to get "worn out" eroding lands under protective cover. Protection of the land and restoring its timber productivity were the overriding concerns.

Since the 1930's, increased attention has been brought to the role of state forests and state parks in providing outdoor recreational opportunities. A tendency to try to make state forests all things to all people has sometimes resulted in the loss of the unique backcountry experiences offered by many of these areas. In addition, greater use by the public often has resulted in conflicts between users, an increasd need for law enforcement, greater maintenance expense, degradation of the natural surroundings, and a demand for better facilities.

Management in Iowa has attempted to maintain a distinction between the state forests and the state parks in regard to the types of recreation experiences available. The relatively large size of the major Iowa state forests offers visitors a backcountry experience not obtainable elsewhere in the state, and the development of facilities has been on a limited basis. Iowa's state parks, on the other hand, are more highly developed, and park users typically engage in more concentrated or intensive forms of outdoor recreation. Nevertheless, recreational use of the Yellow River State Forest in northeastern Iowa may have increased to a point where the quality and very nature of the intended backcountry experience are threatened.

We suspected that other state forest managers in the central United States are, or soon will be, encountering the same problem. This concern led to the development of a questionnaire designed to document selected characteristics of state forests in mid-America and to identify recreation management philosophies and practices in those forests.

The states of Ohio, Indiana, Illinois, Iowa, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas were included in the survey. The criteria for selection were (1) regional geographic location, (2) a relatively small percentage (less than 25% of land area under forest cover, and (3) a lack of or relatively small amount of National Forest land within the state. Oklahoma, Nebraska, and Kansas have not established state forests; thus, the findings reflect data obtained from the remaining seven states.

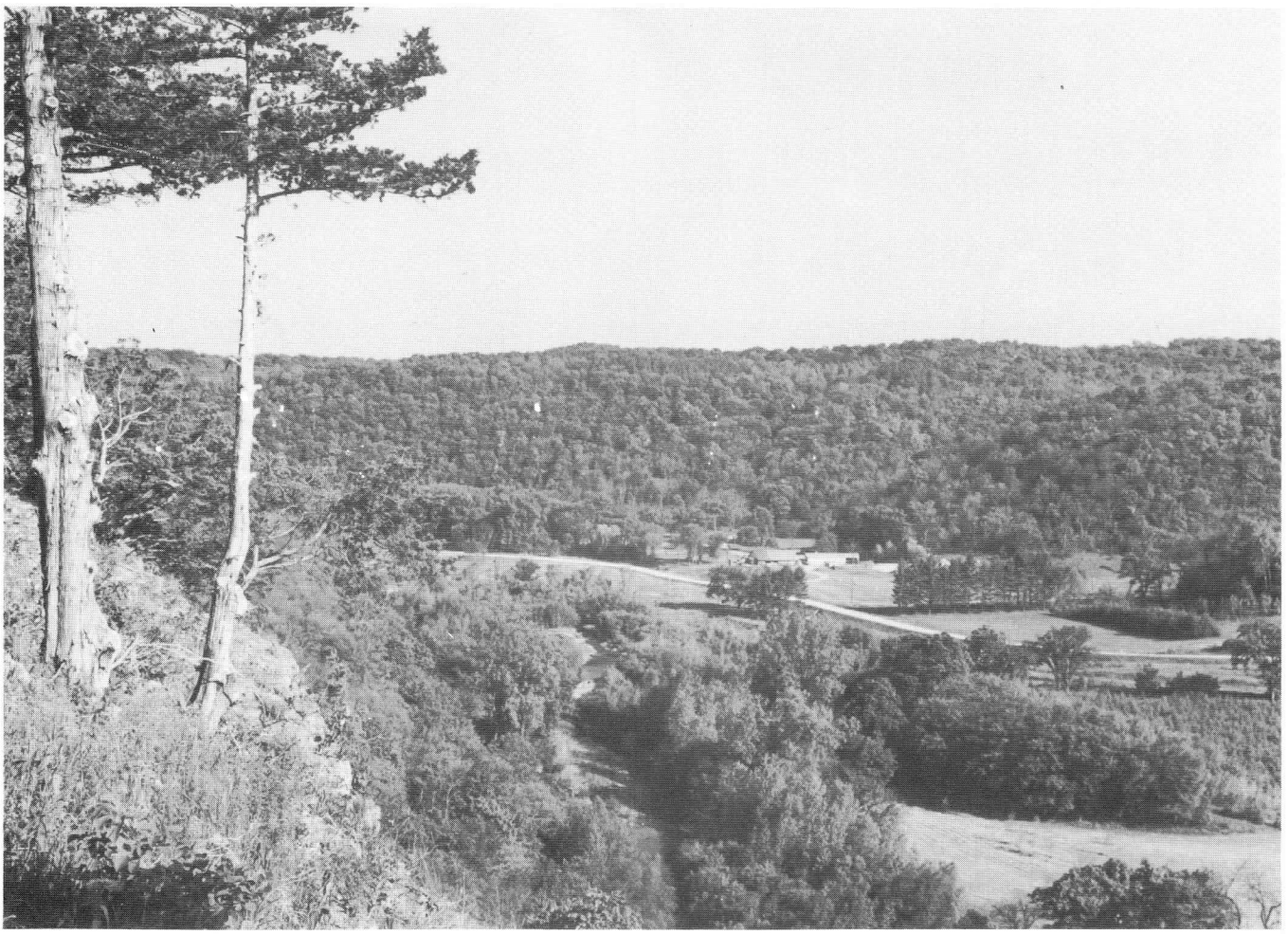
State Forest Characteristics

Table I summarizes selected characteristics of the state forest and state park systems in Ohio, Indiana, Illinois, Iowa, North Dakota, and Texas. The amount of land in state forests, expressed as a percentage of the amount of land in state parks, ranges broadly from five (Texas) to 213 (Indiana). In all seven states, the number of state parks exceeds the number of state forests, but the average size of individual state forests exceeds the average size of the state parks.

For the seven states surveyed, state forest land is relatively scarce. In none of the seven states does the amount of land in state forests constitute even 1 percent of the state's total land area. In addition, the percentage of forested land in state

Table 1. Selected Characteristics of State Forest and State Park Systems, 1977.

	State Forests			State Parks		
State	Total Acres	Number	Average Acreage	Total Acres	Number	Average Acreage
Ohio	171,121	20	8,556	108,760	73	1,490
Indiana	141,000	11	12,818	66,186	21	3,152
Illinois	14,750	4	3,690	88,098	61	1,440
Iowa	23,750	6	3,958	49,000	70	700
North Dakota	11,500	6	1,917	7,432	17	437
South Dakota	73,000	1	73,000	87,326	40	2,183
Texas	6,943	4	1,736	142,718	102	1,399



Yellow River State Forest in northeastern Iowa offers recreationists a variety of opportunities in 6,000 acres of beautiful wooded hills and valleys.

forest is relatively small, in all seven states making up less than 4 percent of the total wooded area.

The state foresters surveyed reported that all their state forests are open to the public for recreation, but that recreational use tends to be secondary to timber management. Camping, hiking, nature study, picnicking, horseback riding, fishing, and hunting tend to be the most encouraged recreational activities in the state forests. In general, off-road vehicles, snowmobiles, and power boats are discouraged or prohibited. State forest management emphasizes nonmechanized, dispersed recreation that assumes (if not requires) a more or less natural environment.

State parks, on the other hand, were described as being more developed and more oriented towards intensive recreation. State parks in the seven states surveyed offer more developed facilities for campers and other recreationists, including showers, flush toilets, and recreational vehicle dumps and utility "hookups." These amenities are not found in the typical state forests of mid-America. State forests tend to cater to the nonmechanized user and are developed in a limited way primarily to protect the resource rather than to provide conveniences for the camper. Most of the seven states permit a full range of camping equipment, but two of them discourage or prohibit the use of large motor homes and travel trailers in the state forests.

State parks were typically described as being more heavily used and regulated than state forests. In the latter, length-of-stay restrictions are the primary use-limitation management tool. State park managers, on the other hand, usually are able to restrict camping to designated sites and to charge fees as well as to limit length of stay. A few states have or soon will have advance registration procedures in their park systems.

The findings indicate that, while state forest management has permitted vehicular access to campgrounds and picnic areas, managers are attempting to provide a backcountry kind of experience away from the intensively used sites as an alternative to the type of use and management characteristic of the more developed, intensively used state parks. Because recreationists use campgrounds as bases for extensive activities such as hunting, fishing, and hiking, the success of this attempt to provide a backcountry experience would seem to depend on how state forest managers respond to the ever-increasing use and development of their more popular camping areas.

Conclusion

It is ironic that, while large portions of state forests in mid-America have been managed for primitive, dispersed kinds of recreational activity that require a natural environment offering opportunity for solitude, man-

Increasing use of Iowa's Yellow River State Forest may threaten the quality of the recreational experience for some visitors.

agement techniques that effectively limit amounts of use have been utilized primarily in the state parks. The time may have been reached when the contradiction between a minimal regulation approach to camping (in particular) and a situation that calls for a strong use-limitation strategy must be resolved. The alternatives seem clear: (1) the maintenance of the character of the intended experiences for which many state forests have been managed through effective limits on the type and amount of use *or* (2) a change in the character of recreational experiences as sites are developed to accommodate increasing levels and more intensive types of use. If the latter occurs, the current distinction between state parks and state forests in regard to the nature of recreational use of each will no longer be meaningful.

Designated campsites, rigid capacity limits, and stringently enforced length-of-stay restrictions could be used to effectively limit the amount of recreational use. If demand exceeds supply, some kind of advance reservation system would help to reduce the amount of frustration that results when users arrive at the gate and are turned away because capacity in a particular area has been reached.

Limiting the amount of recreational use can be accomplished with less difficulty than changing the existing type of use. If one of the objectives of state forest management is to provide quality backcountry recreational experiences, an implication might be that camping should be tent-type and on a walk-in basis *only.* Reversion to this kind of camping would be difficult and, in some situations, perhaps impossible. However, if the forest manager wants to achieve backcountry objectives in the camping area *per se,* as well as in the surrounding environment, this issue of change in type of use would be unavoidable.

If the state forests in mid-America are to continue to provide recreational experiences unique ot their settings, size, and resource quality, effective limits on the amount and kind of use of those forests may have to be set and enforced in the near future. The alternative will be to blur the distinction between state forests and state parks and destroy the unique and valuable recreational opportunities that the forests can offer. ■

Photo Credits: Iowa Conservation Commission, Des Moines, Iowa

The Authors—Ted J. Born is former Assistant Professor of Forestry, Iowa State University, Ames, Iowa. H. Gene Hertel is State Forester of Iowa, Iowa Conservation Commission, Des Moines, Iowa. *The authors thank George Thomson and David Countryman, Department of Forestry, Iowa State University for their helpful editorial suggestions.*

Iowa Public Tree Management

A variety of benefits are realized from street trees in Iowa. Larger towns in Iowa often have programs and departments involving the urban forest while the smaller towns do not. Management needs in small towns include maintenance, tree planting, species diversity, and uniformity and continuity of tree programs. A second study is being conducted to deal with the larger towns.

by Paul H. Wray
Steven E. Jungst

STREET trees in Iowa (trees along streets and roads which lie on public property) provide many benefits including: Climate amelioration through their effects on solar radiation, air temperature, air movement, and humidity; engineering uses such as sound control, odor control, pollution control, and snow control; architectural uses because each tree has its own characteristic form, color, texture, and size; and esthetic uses because of lines, forms, colors and textures they project. In many cases the benefits derived from the urban forests are not as great as they could be because the management of this resource is ineffective or nonexistent.

The larger towns (population greater than 10,000) often have programs and departments involving the urban forest while the smaller towns, lacking the resources, often do not.

Small Iowa Communities

The status of tree populations and programs has changed over the past twenty years, partly because of Dutch elm disease. In addition, information concerning either the resource or the programs in towns of less than 10,000 population does not exist.

Forty towns with populations between 500-10,000 (1970 census) were selected at random from almost one thousand total towns in Iowa. The objectives of the study were: (1) Estimate the perception of needs for street trees based on the opinions of community officials, and (2) estimate real needs by an inventory of current street tree populations.

The estimation of perceived needs was based on an interview with a community official most responsible for street tree management in each town. This usually was the city clerk, the mayor or the individual in charge of the street department.

Out of 40 towns, the following responses were observed: 40 felt street trees benefit the community; 13 felt their town had sufficient number of street trees; 2 had an inventory of street trees; 36 felt an inventory would be useful in their program; 8 had a planting program to replace lost trees; 23 employ a person who is responsible for maintaining public trees (this responsibility was always in addition to other duties); 18 have an ordinance which governs the planting of street trees. In addition, the community officials were asked what type of assistance is needed to encourage more street tree planting and maintenance. The responses included: financial (21), technical assistance (5), education (4), and planting help (1).

The planting programs in most of the communities depended upon public involvement and usually private outlay for the purchase of planting stock. The communities would often contribute by purchasing planting stock in larger volumes and then acting as a retailer of the material to private individuals. Much of the direction for these planting programs came from civic organizations within the community.

Street tree maintenance activities were marginal at best. None of the towns had continuous programs. Maintenance was often done as necessary and only in cases of severe need or when everything else was done; street tree maintenance was the lowest of priority items within a community.

Detailed and long term management plans were nonexistent. Most activities were sporadic in type of activity and timing of activity. This is because of the dependence on volunteers or the low priority of the activity within the community government.

In approximately 10% of the sampled communities, street tree planting was prohibited. In all cases this has occurred because of large costs involved in removing elms killed by Dutch elm disease. The enforcement of the ordinance was neither consistent nor uniform; street tree planting was still done by private individuals.

For each of the forty towns, a complete street tree inventory was done for the town to determine some of their real needs and also to serve as a base for management within each town. The inventory was done on a block basis so the community can locate and map each tree if desired. Information collected included suitability of planting site, number of trees needed to occupy suitable sites and individual tree information including location, species, size, and condition.

Almost 90% of the trees were in good condition contrasted to only 2% in poor or failing condition. Many trees required minor maintenance such as minor pruning, but were classified as good because their problems were not a threat to the longevity of the individual tree nor were the communities likely to correct these minor problems. Eight percent were classified as fair and in need of corrective action if the trees were to continue to be functional.

The size distribution of the trees was as expected (Table 1). A large proportion (49.9%) was in the two smallest size classes, and the lowest proportion (13%) was in the greater than 20 inch diameter class. The smallest size classes porbably represent a great deal of new planting done since the loss of the elms; the

Diameter (inches)	Percent of total
0-3	32.0
3-6	17.9
6-12	13.8
12-20	23.3
Over 20	13.0

Table 1. Size distribution of street trees by diameter.

smaller proportion of large trees is due in part to the removal of the large elms and also due to the relatively severe environment in which street trees must survive.

The species mix and distribution may be the largest potential management problem the smaller communities face (Tables 2 and 3). The diversity in species selection used for street trees is too small; the top three species comprise over 42% of the total tree populations. In addition, some of the species which comprise a fairly large percentage of the total tree population are not desirable street trees (silver maple, elms, black walnut, crabapple, and honeylocust).

There also exists a great potential for tree planting. The percent of suitable planting sites not planted ranges from 16.9% to 78.5% with an average of approximatley 40% (Table 4). The need for additional tree planting tends to increase with increasing town size. The room for additional tree planting also represents an untapped resource. The utilization of urban trees, especially for firewood, has increased tremendously during the past ten years. Through increased utilization of urban planting sites, some of this demand can be met without deteriorating the urban environment.

The greatest management needs for street trees in Iowa's small towns include the following: (1) The need for more uniformity and continuity of tree programs, (2) establishment of maintenance routines for street trees, (3) the need for additional tree planting, and (4) the need for a better selection and greater diversity in the species used for street trees.

Species	Percent of total
sugar maple	16.9
green ash	13.7
silver maple	12.0
Norway maple	8.1
Siberian/Chinese elm	4.7
hackberry	4.5
black walnut	3.7
crabapple	2.5
honeylocust	2.3
red elm	2.2

Table 2. Species distribution of street trees; ten most common.

Town population	Three most abundant species percent of total average	high	low
500-999	51.4	64.6	35.1
1000-2499	48.6	62.5	30.2
2500-4999	49.3	63.7	31.6
5000-10,000	43.4	52.8	35.4

Table 3. Percent of total street tree population of the three most abundant species by population of town.

Town population	No. of trees	% unplanted	high(%)	low(%)
500-999	467	35.7	48.7	16.9
1000-2499	778	38.6	73.4	10.2
2500-4999	1414	41.0	63.1	20.5
5000-10,000	2241	44.1	78.5	30.1

Table 4. Number of street trees and percent of plantable sites without trees by population of town.

Large Iowa Communities

While the larger Iowa communities (10,000 population or greater) typically have programs or departments with responsibility for public trees in the town, the effectiveness of such programs and departments varies widely. Responsibility for tree management may fall to a city forester, a parks and recreation director, or a director of public works. Attitudes toward the urban tree resource on the part of city officials is quite variable, and in most instances, those attitudes play a major role in determining the success of management programs.

The larger communities encounter most of the tree problems that the smaller towns do plus a host of others as a result of greater size, increased crowding, and increased land holdings used for parks and greenbelts. Because of this, a second study is being conducted to deal specifically with the 28 towns in Iowa with populations of 10,000 or greater. The objectives of the study are 1) to identify and evaluate information needs for public trees based on interviews with city officials and persons charged with public tree management, and 2) to develop techniques or systems to meet these needs.

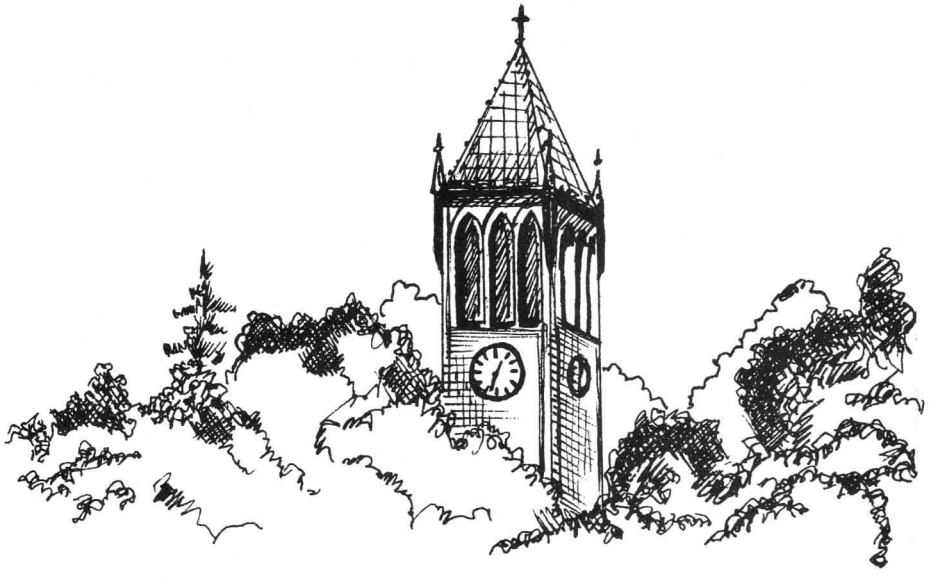
The initial questionnaire indicated many instances of lack of the most basic information necessary for effective management. Seventy-four percent of the towns do not have current knowledge of the number of trees within their jurisdiction by species, size, and condition. Forty-eight percent have had no planting program to replace trees lost within the last 5 years, and 79% felt they had insufficient numbers of trees.

While there are certainly examples of cities doing an excellent job of tree management, many of the larger towns are not doing an adequate job. Of these towns, some are prevented from doing an effective job because of public sentiment and lack of funds. Frequently, however, the overriding reason for ineffective management is lack of timely information.

To help overcome this problem, an information management system is being developed which will standardize data collection, and facilitate maintenance of current information on which to base management decisions. The information management system will be computerized to allow for rapid analysis and retrieval of information, but a noncomputerized approach will also be devised for towns which do not have access to computer facilities. The computerized system will make it possible for management personnel to determine present status of trees in the community, evaluate need for additional plantings, determine where maintenance problems exist, and update data as new information becomes available.

Once completed, the two projects will provide methods of obtaining useful tree management information for towns of all sizes, and should improve the ability of towns to deal effectively with tree management problems. In a state where the tree resource is dwindling, we can ill afford to do less. ■

In the Department



The more things change, the more they remain the same

by Dr. George Thomson

FEBRUARY in the Midwest can be rigorous. When wind-chill factors in the minus forties are added to the concerns for enrollment, budget and employment, it is not unusual to recall such notable quotes as "winter of discontent," and "be not a summer soldier and a sunshine patriot," and "these are the times that try men's souls."

Certainly there is a remarkable awareness of pending austerity that is felt by each one of us—students attempting to establish themselves in permanent jobs, faculty members seeking for research grants, travel funds and equipment, and administrative officers trying to hold organizations together. Perhaps even more debilitating are the suspicion that conditions may not improve for awhile and the shallowly disguised feeling of hurt arising from the conviction that we are too nice a people to be so beset.

Personally, I take a good deal of comfort in the realization that my parents had it a great deal rougher when the really hard times of the 1930's befell them. My Dad didn't even look up from hoeing in the garden that rainy day in 1932 when my mother called out to him that the third and last bank he had money in closed its doors for good. He didn't even hit me when I said in my eleven year old innocence that I supposed that we still had a thousand dollars, didn't we? It turned out he didn't even have ten dollars. Why comfort from that? Well, mostly because I figure that if he survived and lived a long and satisfying life then I certainly can too, particularly when I consider how much better protected and educated and healthy we all are now than people were then.

But what cheers me most is the amazing resilience that goes with being young—and a forester. Nothing seems to change that. I cannot possibly do better than submit, wishing it were my own, a letter from that amazing man and first and longest-tenured department head, Gilmour (Prof. Mac) MacDonald, when he wrote the following letter to his beloved Ames Foresters fifty years ago this month. Read it and rejoice.

February 17, 1931

Dear Ames Foresters: I would like to make this letter a personal one to each of the old Ames foresters but with the memories of two hundred "grads" before me, this would be some job. How much would we prize the opportunity to sit down with each one and talk over, with some, that first year out of college and with others, the problems and achievements that a decade or two has brought to them. Yes, we would have echoes from many corners of the land—echoes from the federal forests of North and South, East and West; from the states; from the private timber interests and from foreign fields. Each one with his special work, with his plans, his hopes and ambitions, striving for accomplishment in a niche in the profession of his choice.

Indeed it is surprising what the field for foresters embraces. If we had the space we might dwell upon Morris's and Beveridge's horned toad farm down in Arizona or Wall's attempts to produce cacti resistant strains of range stock in the southwest; or better still Wiggin's versatility in South Africa in managing a native brick factory and sawmill, while serving as chief operator for appendicitis, running the Mission and serving as Chief Advisor to the Prince in his domestic affairs. An interesting chapter might be Merritt's tree farms on the Alaskan Glaciers or Ling's Agricultural School in the Orient. If time permitted we might hear from Hartman—and others in the creosoting game, in regard to the use of the pressure plants, during periods of depression, for sheep dipping.

It would be interesting to hear from the Madison Laboratory. The recently developed glues, we are told, will hold anything with the possible exception of foresters to their profession. Truax should continue his work.

We would like to report on our rather formidable list of forest supervisors. However, we seldom hear from them since we understand that when they are in from the field all their waking moments are spent on various and sundry reports.

Here at Ames another winter quarter will soon be drawing to a close. A dozen of the seniors (more or less) are beginning to wonder if the "exam," will be as hard, as long, or as obscure as it is reported to have been last year. The freshmen are getting inquisitive about summer camp location. "Say, Prof., is it true that camp this summer is to be held in Alaska or is it in New Hampshire?" "I sure hope it will be in the West." "How many blankets should I take?" "Do they ever have any fishing?" "Is the water cold?" "Are the snakes bad?", etc. Well anyway we are going to have a good camp of 25 to 30 men. We are considering possible locations on the Whitman, Deschutes, and Crater National Forests in Region 6 and also locations in West Virginia, Pennsylvania, New Hampshire and Vermont.

While Prof. Jeffers is at New Haven, Prof. Clark has the mensuration class well entertained or at least occupied. Prof Larsen's class in "72b" also has

a worried look as the quarter draws towards a close. Prof. Horning has about convinced his products class that there is still some hope of saving a small field for lumber against the inroads that the Iowa cornstalks have made in the building game. Bode is getting the farmers out in the state so much interested in planting shelterbelts and windbreaks that there is some fear for the acreage of corn, wheat and hogs.

Since last September we have had a number of special lecturers who have added much interest to the work of the Department. These included R. C. Hall of the Forest Taxation Inquiry; Dr. George R. Hopping of the Division of Entomology, Alberta, Canada; John C. Kuhns, Supervisor of the Whitman National Forest; Dr. H. L. Shirley of the Lake States Forest Experiment Station and in addition we are expecting Dr. C. A. Schenck of Darmstadt, Germany for a series of lectures in May.

During the present depression a number of the boys have been shifting around. When they stop rambling long enough for us to get a line on them again, we will get out a news letter and give you the latest developments.

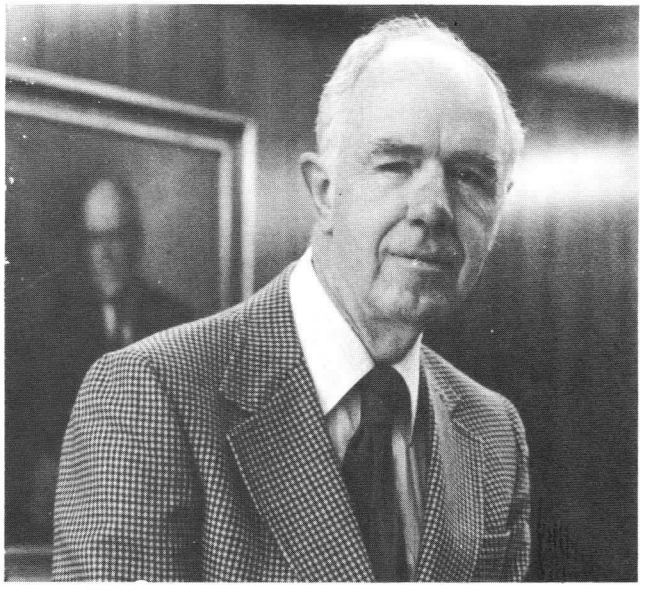
I suppose most all of the old gang will be looking for some of the "old line" advice before closing. Well, here it is: Eyes up; drive safely, but keep moving with the traffic; let the other fellow dangle the crepe. Then remember that the depression has not seriously affected the price of ink and paper. ■

Sincerely, G. M. MacDonald.

If we had no winter, the spring would not be so pleasant: if we did not sometimes taste adversity, prosperity would not be so welcome.—Anne Bradstreet, 1664.

—George W. Thomson
February 11, 1981

ISU Faculty



Dr. Fred S. Hopkins

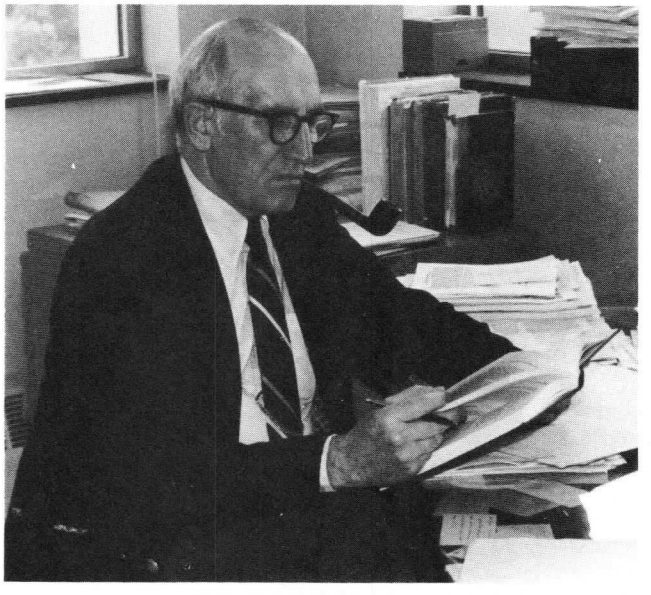
Dr. George W. Thomson received his Bachelor's degree in Forestry at Iowa State College in 1943. After this, he went on to earn his Master's in Forest Management/Plant Physiology and his Ph.D. in Forest Management (Silviculture); both from Iowa State College. He started teaching at Iowa State as an Assistant Professor in 1948. Now residing as chairman of the Forestry Department, Dr. Thomson teaches Forestry 491-Forest Range Resources and Forestry 445-Forest Photogrammetry.

As outside activities, Dr. Thomson enjoys reading, Forest history, foreign travel, photography, the performing arts, and writing. In expressing his thoughts on Forestry today, Dr. Thomson stated, "Forestry has never had a greater need than right now for dedicated and intelligent people. We must seek such students and excite them to excel. Determination, imagination, and moral and intellectual excellence are the only acceptable characteristics of today's resource manager."

Dr. David W. Countryman

Dr. Fred S. Hopkins earned a Bachelor's degree in 1946 from the University of Michigan in Industrial Forestry. From here, he went on to earn two degrees in 1947: Bachelor's in Business Administration from the University of Michigan, and also from the University of Michigan, a MF in Marketing. Dr. Hopkins then earned his Ph.D. in 1959 from Syracuse in Forest Economics. Dr. Hopkins joined the staff in 1959 and now teaches Forestry 300-Forest Resource Management, Forestry 451-Forest Resource Economics and Forestry 453-Forest Resource Policy.

Dr. Hopkins' special interests include economics of forest production and forest resource policy. He is also concerned with international forestry and economic development. Dr. Hopkins' outside leisure activities include travel, music, weed gardening. He also enjoys fixing up his home.



Dr. George W. Thomson

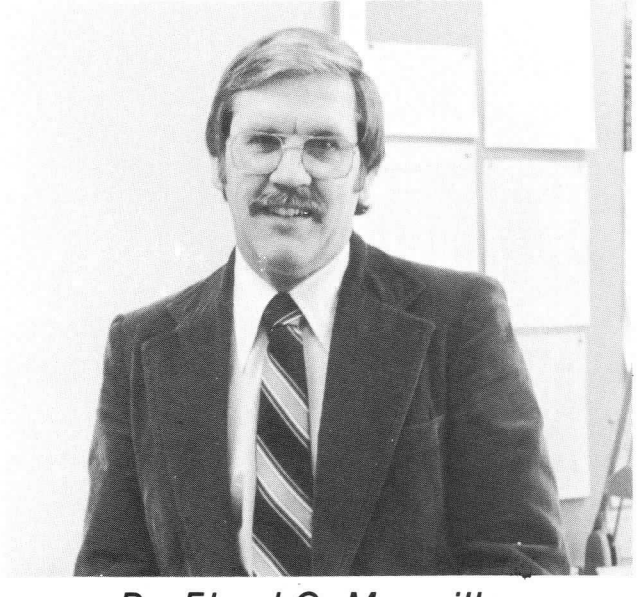
Dr. David W. Countryman received his Bachelor's degree in Forestry Management from Iowa State University in 1966. He also received his Master's degree from Iowa State in 1968 in Forest Management. Dr. Countryman received his Ph.D. in 1973 from the University of Michigan in Forest Management and Planning.

Before joining the staff at Iowa State in 1975, Dr. Countryman worked for the United States Forest Service. Now at Iowa State, Dr. Countryman teaches Forestry 454-Forest Resource Case Studies, Forestry 500-Graduate Seminar, Forestry 594-Advanced Forest Management, and Forestry 601-Research Methods. His outside interests include hunting and fishing.

Dr. Richard B. Hall received his Bachelor's degree in 1969 from Iowa State University in Forest Management Science. After this, he went on to receive his Ph.D. in 1974 from the University of Wisconsin at Madison in Plant Breeding and Genetics concerning forestry. Dr. Hall joined the staff in 1974 and the courses he now teaches are: Forestry 101-Introduction to Forestry, Foresty 201-Forest Ecology, Forestry 302-Silviculture, Forestry 501-Genetics and Tree Improvement, and Forestry 504-Advance Silviculture.

Dr. Hall is currently conducting research concerning the genetic improvement of *Alnus* and *Populus*, developing intensive culture methods for biomass and short rotation sawlog production, nitrogen fixation, flowering and seed production, and vegetative propagation. Dr. Hall's outside interests include: canoeing, jogging, softball, hiking, reading, and tree farming. In expressing his views of forestry at Iowa State University, Dr. Hall states, "All of us, students and faculty, now part of the I.S.U. scene can make a significant impact on the future for Forestry."

Dr. Richard B. Hall



Dr. Floyd G. Manwiller

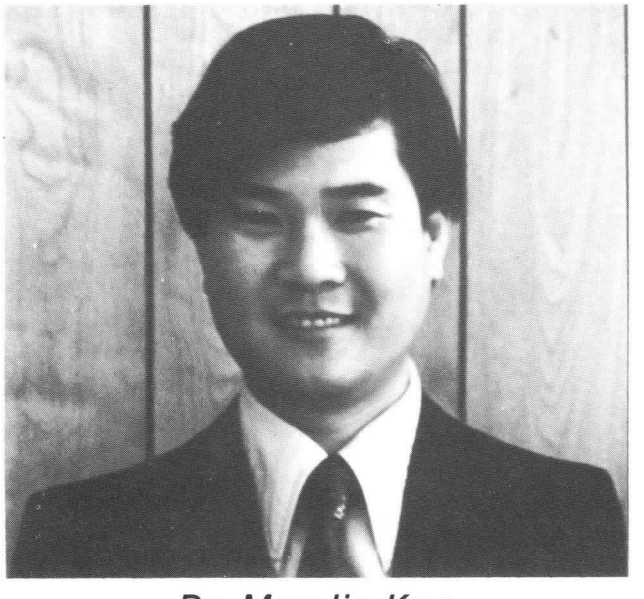
Dr. Floyd G. Manwiller earned his Bachelor's degree in 1961 from Iowa State University in Forest Management. He also received his Ph.D. from Iowa State in 1966 in Wood Science and Plant Cytology with a minor in Biochemistry. Dr. Manwiller joined the staff in December of 1978 and teaches the following courses: Forestry 380-Wood Technology, Forestry 485-Wood Composite Products, Forestry 489-Wood Products Seminar, Forestry 587-Advance Topics in Wood Science, and Forestry 688-Formation of Wood.

Before coming to Iowa State University, Dr. Manwiller worked at the Southern Forest Experiment Station in Pineville, Louisiana from 1966 to 1978. His research involved wood quality and characterization of anatomical, physical, and chemical properties of Southern hardwoods and softwoods. Dr. Manwiller's outside interests include reading, working with wood, running, hunting, and fishing.

Dr. Mon-lin Kuo is the newest member to the Forestry Department. He earned his Bachelor's degree in Forestry from the Chung-Hsing National University located in Taiwan in 1965 for Forestry. From there, he went on to earn his Master's degree in Wood Science from the University of Missouri at Columbia. He then earned his Ph.D. from the University of California at Berkley in Wood Science and Technology.

Before coming to Iowa State, Dr. Kuo was a research assistant and an assistant specialist with the Forest Products laboratory at the University of California. He joined the staff in August of 1980 and teaches Forestry 386-Wood Liquid Relations and Forestry 481-Wood Chemistry. Dr. Kuo's special areas of interest include Wood Science and Wood chemistry.

A hearty welcome to you and your family from all of us here in Forestry at Iowa State.



Dr. Mon-lin Kuo

Dr. Steven Jungst

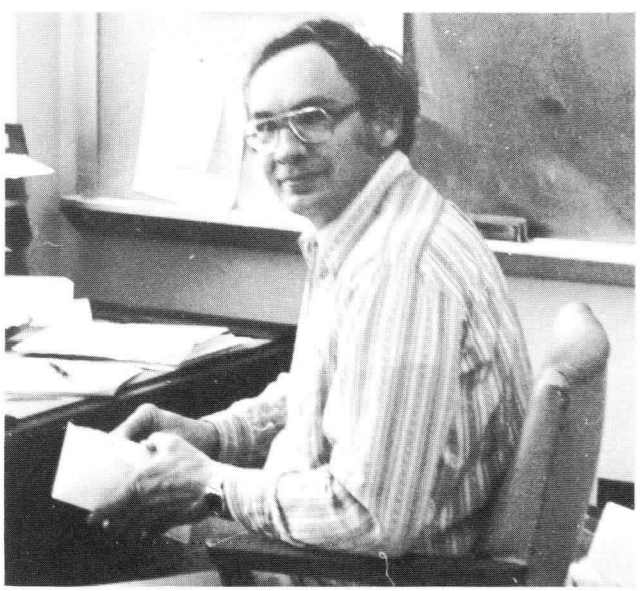
Dr. Steven Jungst received his Bachelor's degree in 1969 from Iowa State University in Forest Management. He then earned his Master's degree in 1976 in Forestry-Biometry from Iowa State University. Dr. Jungst joined the staff in 1975 and now teaches: Forestry 241-Forest Resource Measurements, Forestry 390-Forest Fire Protection and Use, and Forestry 414-General Photogrammetry.

Dr. Jungst is currently conducting research in the areas of wilderness use projection, recreation use inventory, and urban tree inventory. His teaching interests include computer assisted instruction. Dr. Jungst's outside activities include hunting, fishing and woodworking.

Dr. Dean R. Prestemon earned his Bachelor's degree in 1956 from Iowa State College in Forestry-Wood Utilization. He then went on to earn his Master's in Wood Technology in 1957 from the University of Minnesota. In 1966, Dr. Prestemon received his Ph.D. from the University of California in Forestry. Before joining the staff at Iowa State, September 15, 1965, he was doing research.

Dr. Prestemon teaches Forestry 487-Mechanical Processing of Wood and Forestry 488-Physical Properties of Wood in alternate years. His special areas of academic interest include proper use of wood in structures, timber mechanics, and wood processing. Dr. Prestemons' outside leisure activities include woodworking and fishing.

Dr. Dean R. Prestemon



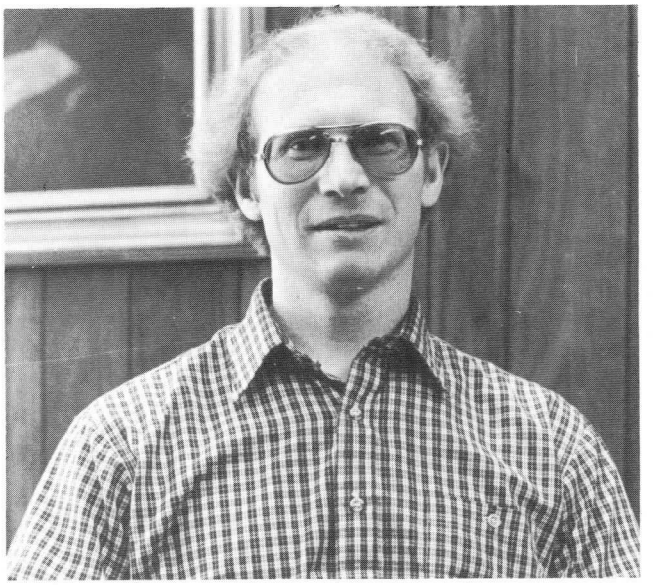
Dr. Paul H. Wray

Dr. Paul H. Wray earned his Bachelor's degree in 1968 from Iowa State University in Forest Management. He then went on to earn his Ph.D. in 1974 from Iowa State University in Forest Biology. Dr. Wray joined the staff in 1975 and is an Associate Professor involved in Extension.

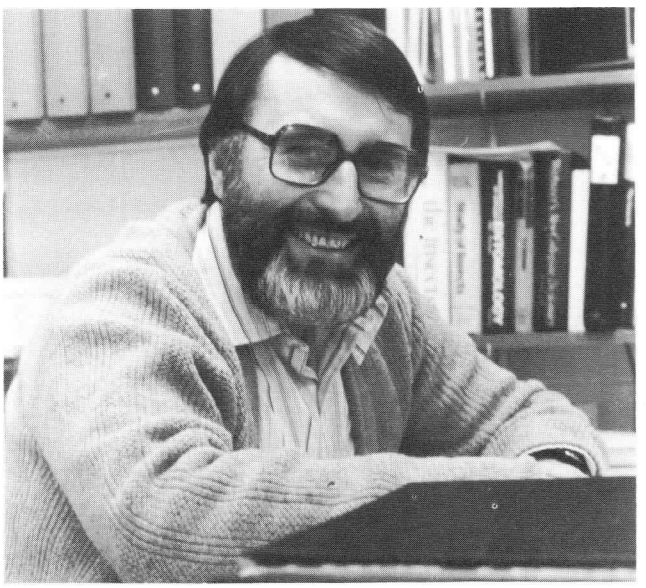
Dr. Wray's special areas of interest include forestry extension and small woodlot management. His outside leisure activities include fishing and woodworking.

Dr. Joe P. Colletti received his Bachelor's degree in Forestry at Humboldt State University in 1972. From there, he went on to obtain his Master's in Forestry in 1974 and his Ph.D. in forestry with a minor in Economics in 1978; both from the University of Wisconsin at Madison. Dr. Colletti joined the staff in June of 1978 and currently teaches the following courses: Forestry 360-Forest Recreation Resource Management, Forestry 397-Forest Regulation and Operation, Forestry 452-Quantitative Analysis in Management of Forest Resources, Forestry 470-Resource Allocation in Forest Recreation, and Forestry 570-Economics of Forest Resource Management.

As special areas of interest, Dr. Colletti is interested in computer simulations and techniques as applied to forest management problems and research on economic forecasts concerning the pulp and paper industry. During his leisure time, Dr. Collettii enjoys running, hiking, football, softball, watching for Martians, and collecting unique quotes. Several of his favorites are, "I seem to have misplaced my watch", and "so, you wanta make a lotsa money?"



Dr. Joe P. Colletti



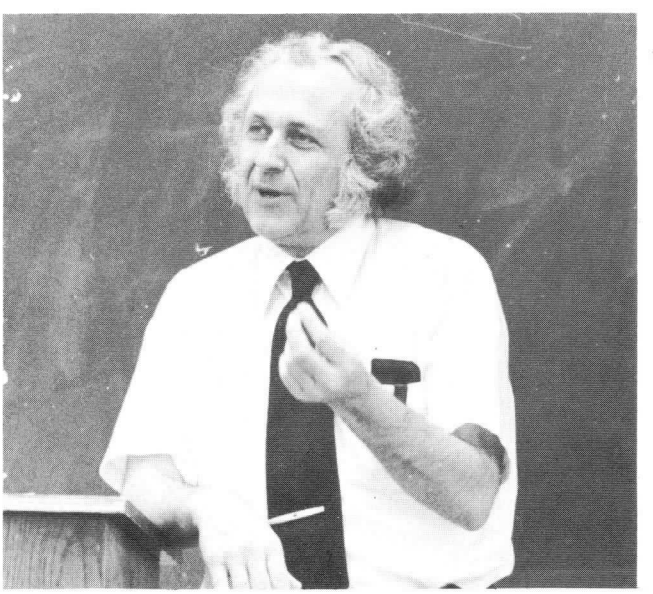
Dr. E. R. Hart

Dr. E. R. Hart received his Bachelor's degree in 1959 from Cornell College in Biology. After this, he went on to receive his M.S. from Texas A&M University in 1965 in Science Education and his Ph.D. in 1972 in Entomology. Dr. Hart joined the staff in January of 1974 and the classes he now teaches are: Entomology 370-General Entomology, Entomology 572-Advanced Insect Morphology, PPSW 416-Forest Pathology-Entomology and PPSW 417-Forest Protection-Pest Management.

Dr. Hart is currenlty conducting research concerning forest entomology with an emphasis on urban forest pest management. Dr. Hart's outside intersts include: motorcycles, firearms, backpacking, and cross-country skiing. Dr. Hart's main concern now is with promotion of multidisciplinary approach to management of forest pests, especially use of simulation modelling.

Dr. Harold S. McNabb received his Bachelor's degree in 1949 from the University of Nebraska in Botany and Chemistry. He then earned his Master's in 1951 from Yale University in Forestry and Plant Science. Dr. McNabb received his Ph.D. from Yale University also in 1954 in Forest Pathology and Plant Physiology. He joined the staff February 1, 1953 and now teaches PPSW 416-Forest Pathology/Entomology, PPSW 417-Forest Pest Management, and PPSW 544-Advanced Forest Pathology and Pest Management.

Dr. McNabb is currently conducting research with the U.S. Forest Service on diseases of poplars growing in short rotation and mycorrhizae of black walnut and poplar. He has also been associated with European laboratories in research and holds courtesy appointments as "Visiting Scientist" with the British Forestry commission and the Dutch Forest Service. Says Dr. McNabb of his interests in international forestry, "I am strongly committed to international cooperation in our research."



Dr. Harold S. McNabb

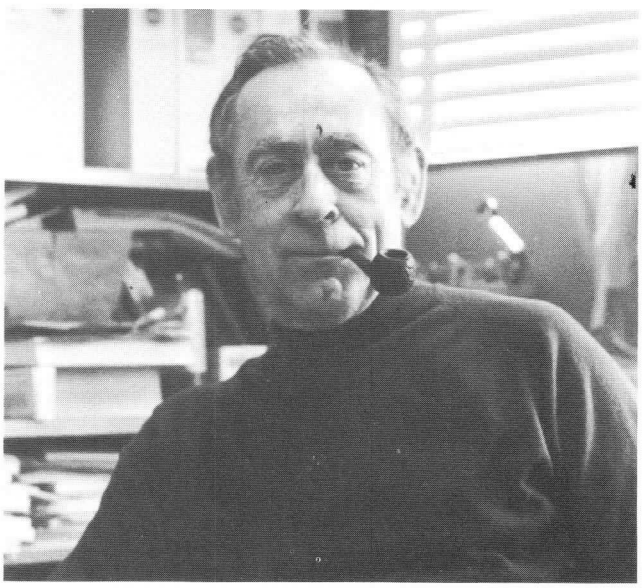
Dr. Richard C. Schultz

Dr. Richard C. Schultz earned his Bachelor's degree in 1965 from Iowa State University in Forest Management. He then received his Master's degree in 1968 from Iowa State University in Forest Biology. Dr. Schultz earned his Ph.D. again from Iowa State in 1970 in Forest Biology. Dr. Schultz joined the staff in 1979 and now teaches: Forestry 301-Forest Biology, Forestry 407-Forest Influences, and Forestry 602-Tree Growth and Development.

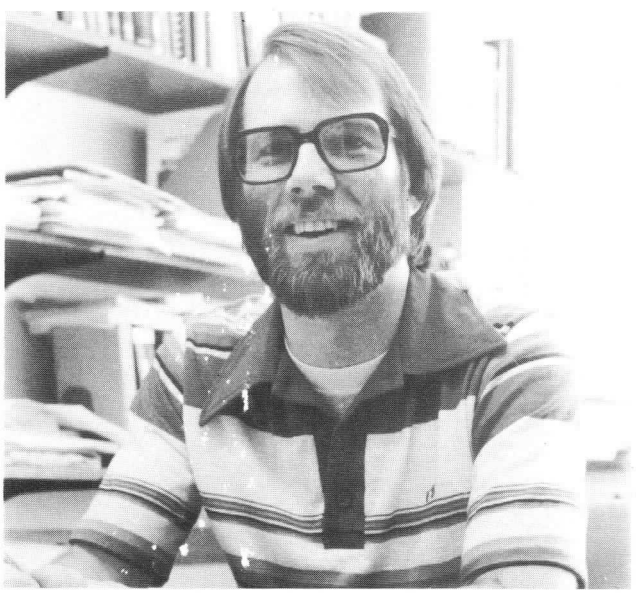
Before coming to Iowa State, Dr. Schultz worked as an Assistant/Associate Professor in Forest Biology and Climatology at Soils University of Georgia from 1972-1979. His special areas of interest include plant nutrition, mycorrhizae, and soil fertility. Dr. Schultz's outside leisure activities include gardening, canoeing, hiking, reading, photograpahy, and classical music.

Dr. Wayne H. Scholtes received his Bachelor's degree in 1939 at Iowa State University in Forestry. He then earned his Master's degree from Duke University in 1940 in Forest Soils. Dr. Scholtes earned his Ph.D. in 1951 at Iowa State in Soils. He joined the staff in 1951 and teaches: Agronomy 110-Orientation, Agronomy 154-Fundamentals of Soil Science, Agronomy 357-Forest Soils, and Agronomy 473-Soil Genesis and Survey.

Dr. Scholtes worked for the United States Department of Agriculture's Soil Conservation Service before coming to Iowa State. His special areas of interest include geochronology and soil genesis. Dr. Scholtes' outside leisure activities include Kiwanis, golf, and travel.



Dr. Wayne H. Scholtes



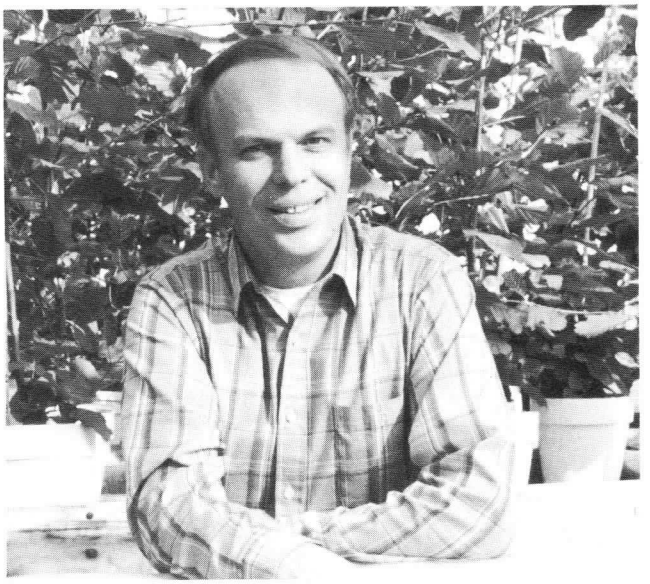
Dr. Carl W. Mize

Dr. Carl W. Mize received his Bachelor's degree in Math and Chemistry from Brockport State in Brockport, New York. After this, he went on to earn his Master's degree at Humboldt State in Forest Ecology at Arcata, California. Finally, he obtained his Ph.D. in quantitative Silviculture from the College of Forestry in Syracuse, New York. Dr. Mize joined the staff in November of 1977 and teaches: Forestry 101 lab-Introduction to Forestry, Forestry 200-Forest Conservation, Forestry 342-Stand Dynamics, Forestry 344-Forest Resource Survey, and Forestry 543-Forest Biometry.

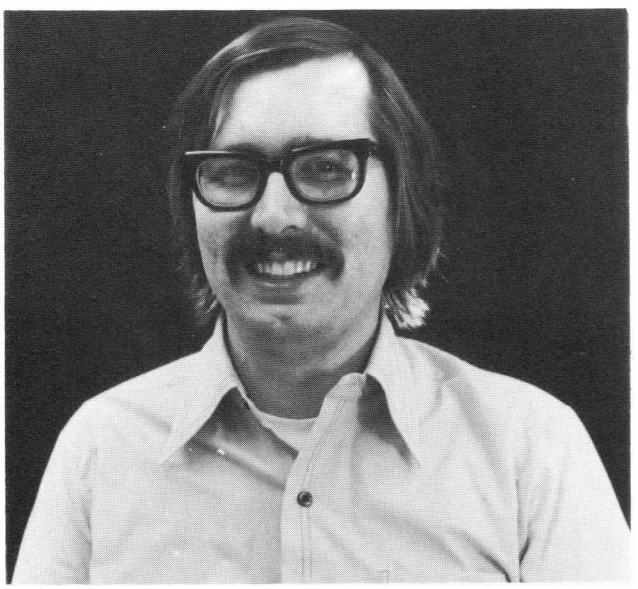
Dr. Mize's special interests include experimental design and analysis and tormenting forest biologists by making them do their experiments properly (from a statistical point of view). Before coming to Iowa State University, Dr. Mize was a research assistant at Humboldt State in the College of Forestry. His outside interests include running, backpacking, loafing, and fixing up his old house.

Mr. Richard R. Faltonson received his Bachelor's degree in Horticulture from Iowa State University in 1977. Before joining the staff in December of 1970, he worked for the United States Forest Service at the North Central Forest Experiment Station. Usually, as a professional/scientific staff member, Mr. Faltonson does not have a teaching assignment but he does occasionally assist in Forestry 301 laboratories.

Mr. Faltonson's specific areas of interest are concentrated on concepts of vegetative propagation and forest tree regeneration, particularly as it applies to intensive culture concepts of forest biology. His outside leisure activities include travel, landscape gardening, running, hiking, cross country skiing, snow shoeing, reading, and photography.



Richard R. Faltonson



Tom Hillson

Tom Hillson earned his Bachelor's and Master's degrees in Botany from Iowa State Univeristy. Mr. Hillson has been a Research Assistant at Iowa State for two years. He taught biology at Des Moines Area Community College for one year. As a research assistant, Mr. Hillson assists Dr. Hall and Dr. Schultz in their research, and graduate students in their projects. Mr. Hillson familiarizes the graduate students with the equipment that is available to them. Mr. Hillson's own interests lay in tissue culture, especially sterile cultures of Populus hybrids and Alnus.

Dr. Paul N. Hinz received his Bachelor's in Wood Utilization from Pennsylvania State, a Master's in Wood Technology from North Carolina State, and a Master's and Ph.D. in Statistics from Wisconsin. Dr. Hinz has been teaching at Iowa State for 12 years. Before coming to Iowa State, he worked for 9 years at the U.S. Forest Products Laboratory. Dr. Hinz has a double appointment in Statistics and Forestry and is currently teaching Methods of Multivariate Analysis, Experimental Design for Research Workers, and Statistical methods.

Dr. Paul N. Hinz

The ISU Forestry Club

Club Advisors:
Dr. Carl Mize
Dr. Joe Colletti

Executive Council: Treasurer, Bill Hildebrandt; Secretary, Linda Gray; Ames Forester Co-Editor, Jody Nelson; President, Al Weber; Freshman Representative, Barb King; Vice President, Al Wimmer; Ag Concil Senior Representative and Ames Forester Co-Editor, Jo Mueller; Ag Council Junior Representative, Dave Peters.

Old Growth Seniors: Steve Schumacher, Marietjie Burger, Al Weber, Joe Colletti (advisor) and John Jennett.

Seniors: Mike Scanlon, Joe Bornong, Al Wimmer, Jo Mueller, Kris Holt, Dave Valves, Bill Hildebrandt and Bernie Bornong.

Juniors: Gary Bahr, Linda Gray, Deb Steig, Jody Nelson, Michelle Nummela, Gail Hall, Michele Shaw and Dave Peters.

Sophomores and Freshman: Kirk Titus, Richard Johnson, Barb King, Eileen Drees, Jeff Prestemon, Sharna Robinson and Dave Wormley.

VEISHEA '80

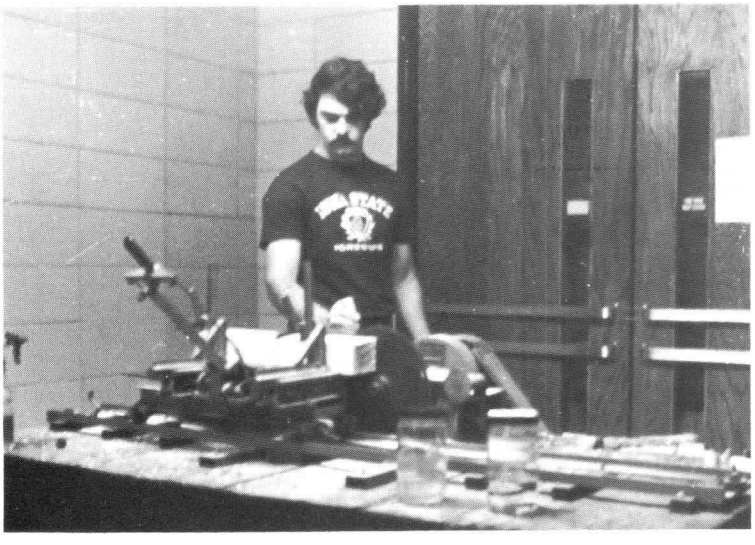
by Reinee Eshelmann

FORESTRY Club received third place in the Agricultural College Division for their Veishea Display. This honor has not been accomplished for many years. It all started with a totally new working atmosphere.

The atmosphere was unlike the hurry and hustle of previous years. This years Veishea can be correlated with springtime; a gradual progression, a few spectacular days of work and then a certian last minute burst which puts it into full bloom.

However, unlike springtime the time sequence is much longer. The gradual preparations began fall quarter. A floor plan was developed to follow the chosen theme, "Plant Iowa." Starting winter quarter, night meetings were arranged for both the Veishea committee and for the forestry people who chose to work on the display. The display consisted of 12 exhibits. All the exhibits tied back into the main theme.

Thirty foresters devoted time to the Veishea project. Each chose an exhibit which interested them and began to sketch their ideas, to make contacts, to buy needed materials, and to construct their displays. Yet with all this work going on the hallways remained quiet. So quiet, that some people wondered if VEISHEA was really here until . . . . .

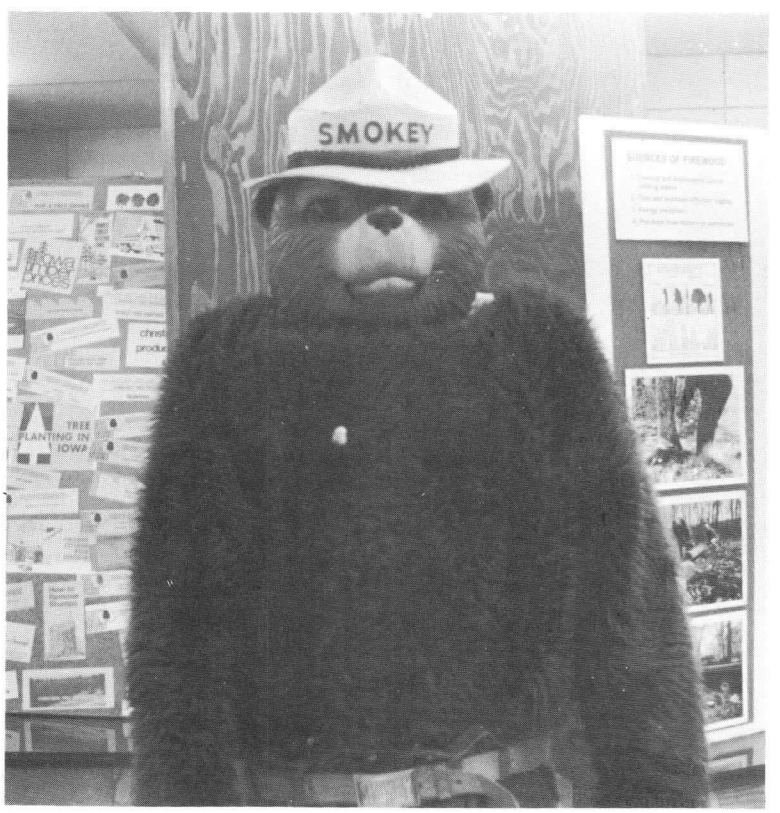


WINS THIRD

The two spectacular days of work came. The saws began sawing. The hammers began pounding. With scissors, tape and construction paper, the foresters put their minds and bodies to work. The determined crew set forth until the mission was accomplished.

The display stood in full blossom. From welcome sign to closing note, it was ready for the judges to come through. This year the club had some new ideas. One was the Forestry Theater which had regularly scheduled shows. Of course, the cartoons went over the best with the youngsters, even some overgrown youngsters. In keeping with tradition, the sawmill was back again this year. Also, Smokey the Bear acted as Forestry Club's special guest.

Though the last two days were a mild hustle and bustle of activity to get the display just right, it all paid off in the end. Maybe next year we'll do even better. ■



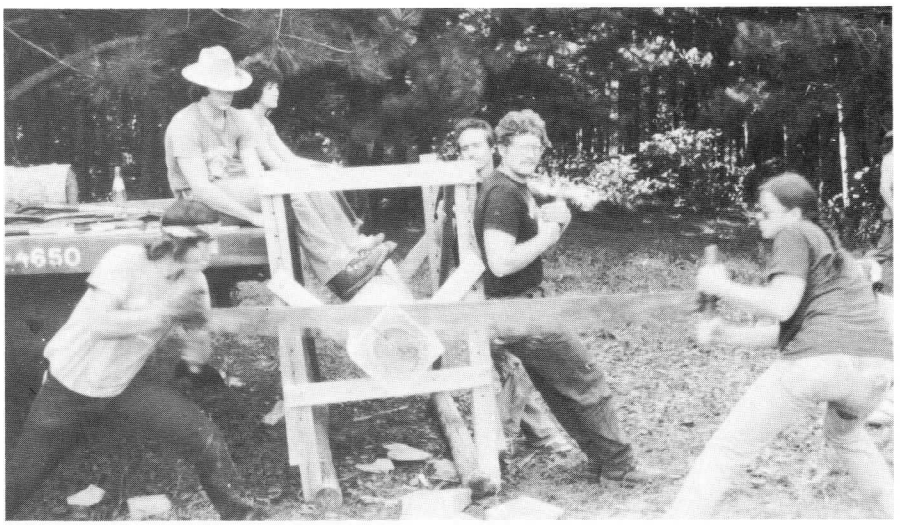
Fall Foresters' Day

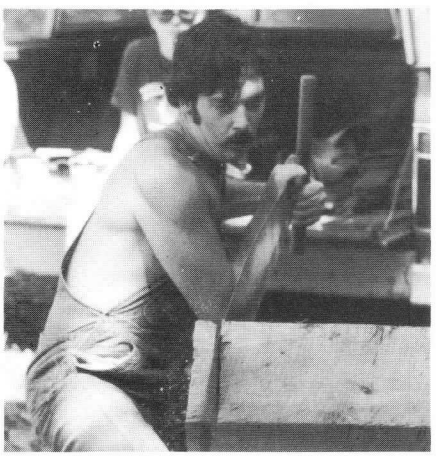
by Kris Holt

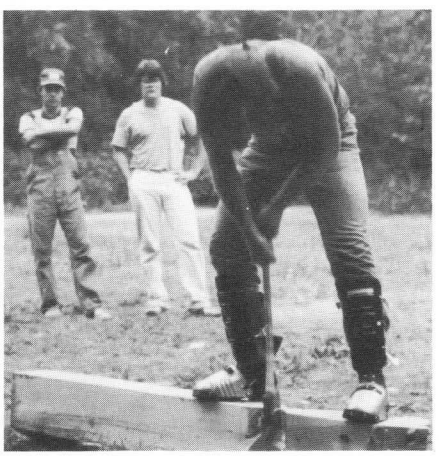
IN October, when the mornings are brisk and hardwood forests begin to mellow, the Forestry club celebrates its reunion with the Fall Foresters' Day. The event marks the renewal of our heritage: The old methods of logging and forestry.

We held Fall Foresters' Day at Holst Tract State Forest. This year, the event was scheduled on a Sunday due to midterms, Conclave, the SAF convention and a home football game.

About thirty people competed in a day of tree-felling, buck sawing, speed chopping, log tossing . . . and others. A cross-country run was added to the list of competitions.







EVENT WINNERS

ONE-MAN BUCK
1. Phil Stocks
2. Kris Holt

TWO-MAN BUCK
1. Mike Scanlon & Kris Holt

TWO-LADY BUCK
1. Gail Hall & Marietjie Burger

JACK'N JILL BUCK
1. Al Wimmer & Marietjie Burger

PULP TOSS
1. Al Weber & Rich Straight

BOLT THROW
1. Phil Stocks

CROSS COUNTRY
1. Rod Marlatt

DIZZY IZZY
1. Jeff Kerns

TREE FELLING
1. Al Wimmer
2. Mike Scanlon

SPEED CHOP
1. John Jennett
2. Mike Scanlon

TOBACCO SPIT
1. Al Wimmer

OVERALL
1. Phil Stocks
2. Al Wimmer
3. Mike Scanlon

Freshmen Welcome

by Al Weber

THE preparations for this year's Freshman Welcome actually started 5 months in advance. This preparation was to start a Big Brother- Big Sister Program between the upper classmen and incoming freshmen. To do this, each upper classman was given the names of 4 to 5 incoming students to correspond with during the summer. Through these letters the new students found out about things like forestry, forestry club, and college life, and it also gave them someone to go to when they had a question.

So—when it was time to start school again this fall, all the Big Brothers and Sisters told their Little Brothers and Sisters about Freshman Welcome. It was very successful, because we had the best turnout of freshman in quite a few years. The atmosphere, at Holst Tract State Forest, was very relaxed with everyone seeming to know at least one person who was there. This led to other introductions and soon everyone was carrying on like they had known each other for years.

Dr. Thomson brought his horse shoes along again this year and taught many novice horse shoe pitchers the correct way to pitch them. He taught the more experienced pitchers a thing or two, also. While the horse shoe pitching was going on, a few members were setting up a net for the annual faculty-upperclassmen verses underclassmen volleyball grudge match. As this was being done, Dr. Mize and Dr. Colletti were trying to round up some players for the faculty-upperclassmen team. The hardest thing they had to do was convince some of the faculty members to play, but finally Dr. Schultz and Dr. Hall gave in. After the teams were formed, the game began. Neither team proved to be superior over the other one, but then that depended on which team you asked. There were some bad plays made, also some very good ones and everyone seemed to have a good time. Refreshment breaks were taken often, due to the heat.

Supper time and exhaustion seemed to arrive at the same time, so a meal of hamburgers, hot dogs and beans was prepared. After eating some members decided to head back to Ames, while the rest stayed and told stories around the campfire until later in the evening. ■

Christmas Caroling

by Anita Montag

THOUGH turnout was small, the students who did go caroling had a great time. The night of December 12 was perfect for singing. It was warm and there was very little wind, unlike last year.

After the serenading tour of Ames, stopping at the faculty homes, we returned to the Christmas party in Bessey Hall. There we enjoyed a variety of Christmas goodies and the entertaining antics of Jeremy Mize.

Thanks to all who helped with the party, and to those who missed it—see you next year. ■

Ski Trip

by Bernie Bornong

THANKS to the snow making machines at Winter World, Humboldt, we were able to have our annual ski party on January 16. The only snow between here and Colorado was the 8-10 inches of man-made snow at Winter World. About 25 club members and guests made the hour and a half journey, and were rewarded by an excellent time. Chili and beverages, munchies and lively conversation around the fireplace kept the skiers warm. Despite rumors of a "Raffle", the winners of door prizes were as follows: first prize was a Buck Hunting Knife and went to Eric Leacox, second prize was an unbreakable thermos and went to Karl Krech and third prize was a Swiss army knife and went to Jill Collins. ■

Firesides

by Anita Montag

ON various Sunday evenings, ten to fifteen I.S.U. Forestry students can be found in the home of a professor. The fireside program gives the students an opportunity to get to know each other, and their professors better.

During the evening the students sit and talk about various subjects and obtain a better understanding about the professors' position, and in turn the professors are better able to understand the students' position. The students and professors establish a mutual ground of friendship which improves the classroom atmosphere. So far this year, Dr. Hall, Dr. Manwiller, and Dr. Thomson have been hosts for firesides. ■

Spring Foresters' Day

by Jo Mueller

SPRING Foresters' day was a day of hard work and a lot of fun this year. The event was held on April 12, 1980 at Holst Tract State Forest.

The day was devoted to several pressing problems at Holst Tract. One was the general clean-up of the areas where groups often gather. This was accomplished by several ambitious foresters with garbage bags in hand.

Trail maintenance was also a topic of business. One water bar and nine check dams were constructed on the north-south ridge trail connecting the main road and the north boundary. Debris was also removed from the trails and used to deter traffic from traveling on unstable areas adjacent to the trail.

The main road was blocked off 200 yards from the old lodge to prevent vehicle damage in that area and eight water bars were built in strategic places along this road to prevent erosion.

Work began at 10:00 a.m. and the projects were completed by 1:30 p.m. The rest of the afternoon was spent hiking, playing volleyball, and relaxing. A supper was provided by the Forestry club at 5:30 p.m. for the hungry bunch. The day was ended with a roaring campfire, short talk, long stories and plenty of laughter. ■

Christmas Tree Sales

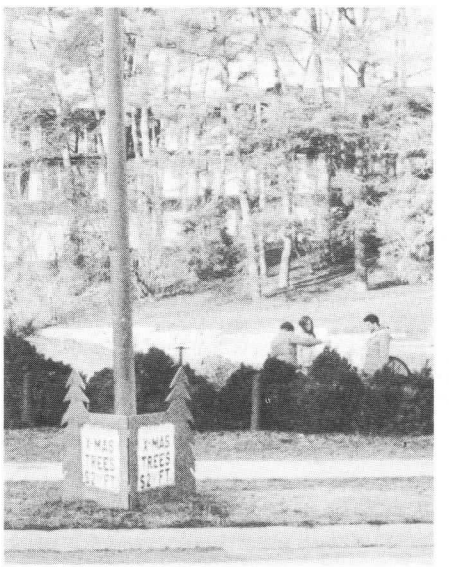
by Al Wimmer

AS December rolled around, preparations for the Christmas holidays, and the Forestry Club's Annual Christmas Tree Sales, were well under way. Sales started on Friday, December 5 and in just five short days, it was all over.

We purchased 407 Scotch and White pine trees, ranging from 2 to 8 feet, from Eldon and Muriel Weber's "Christmas Forest" in Genesco, Illinois. We had hoped to purchase these trees from Iowa producers, but the supplies were very limited and the demand was high. I was very pleased with the quality of the Christmas trees and I am sure this contributed to the success of the sales. A big "thanks" to the Webers for their continued support and service to our club.

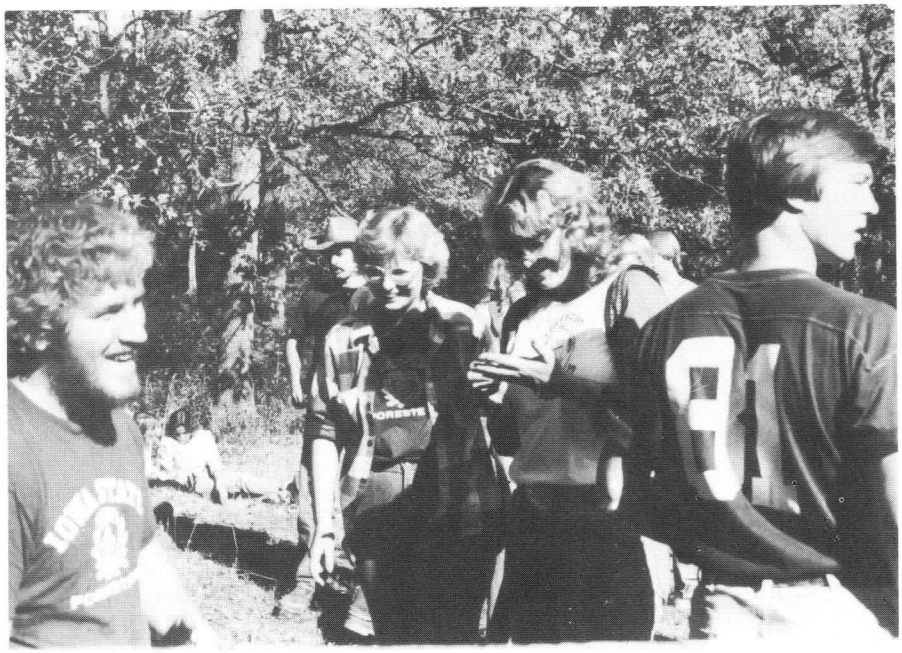
The weather during the sales, as typical of this year's winter (??), was mild with an occasional rain. Hardly the type of weather to spark the Christmas spirit. However, this did not stop the people from buying or the sellers from showing up to work. All but ½ of one tree was sold this year. The tree had definite problems and a little "surgery" was needed. The public finally realized the tree's potential and the last tree was carried away.

As in every great event, there are moments that live in the minds of people forever. One of the more memorable moments of this year was the trip to Illinois to pick up the trees.



It started at 4:00 a.m. in the cab of Bob Collin's semi-truck and ended about 7:30 p.m. at the state nursery. Another memorable event occured when a customer was curious about the "brown stuff" caught between the branches of a particular tree. One of the sales persons, who shall remain nameless (just ask Mike), replied that the trees had been hauled in a cattle truck. It took awhile to convince the lady that it was really just needles, cobwebs, dust, and pollen. However, she did finally buy a tree and we all had a good laugh. And finally, who will forget the night that we all went out for a lasagna dinner. The club paid $5 for each person that had contributed more than 4 hours of work as an incentive and the results were super. It was a most enjoyable evening with good food, good friends, and a few awards to recognize the people who had worked extra hard.

This was an exceptionally good year for the Forestry Club from Christmas tree sales. We recovered the largest profit since the club started selling trees and everyone who helped deserves a big pat on the back. These funds will support various club activities and scholarships for the coming year. A special thanks to all those people that pitched-in to help set up and sell trees, to Gail Hall and Bob Collins for the use of their trucks and to Jerry Grebasch for allowing us the use of the nursery's facilities for the storage of our trees. Here's to a bigger and better success for next year's sales. ■



Midwesterr

by Dave Peters

THE 29th Midwestern Foresters Conclave was hosted by the University of Missouri on October 17-19, 1980. Fourteen students made the eight-hour trip to Lake of the Ozarks State Park for a day full of both fun and frustrations.

The frustrations stemmed from the fact that the Iowa State team failed to score a point through all thirteen events. Don't let this lead you to believe we didn't put out a valiant effort—no, far from it. Kris Holt and Mike Scanlon finished fifth in the chain throw and the one-man crosscut, respectively, but alas, team points were given only to the first four finishers. Winning times like 32.9 seconds for the speed chop and 23.5 seconds for the two-man crosscut gave an indication of

Conclave

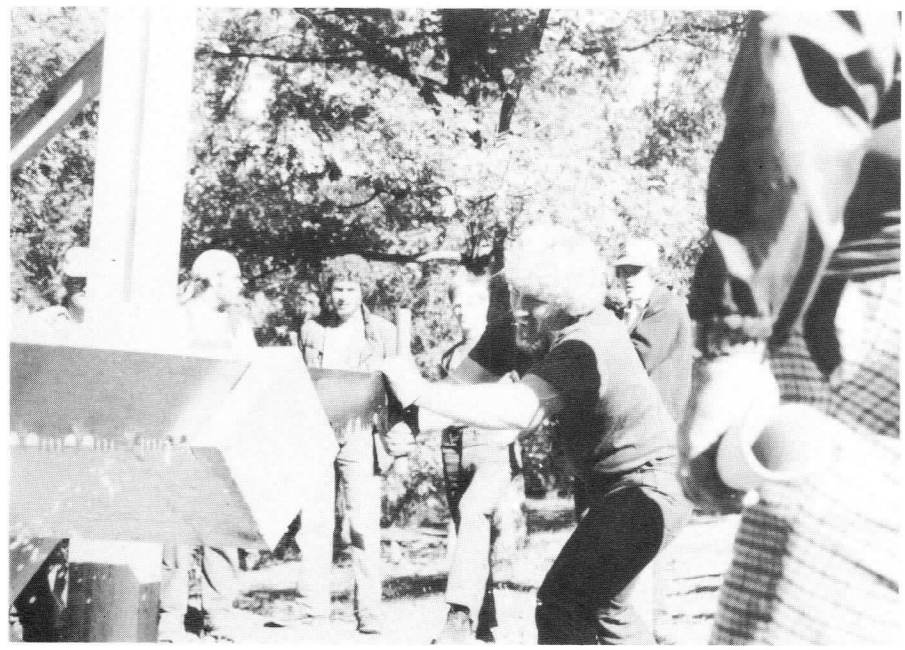
the caliber of competition we were up against.

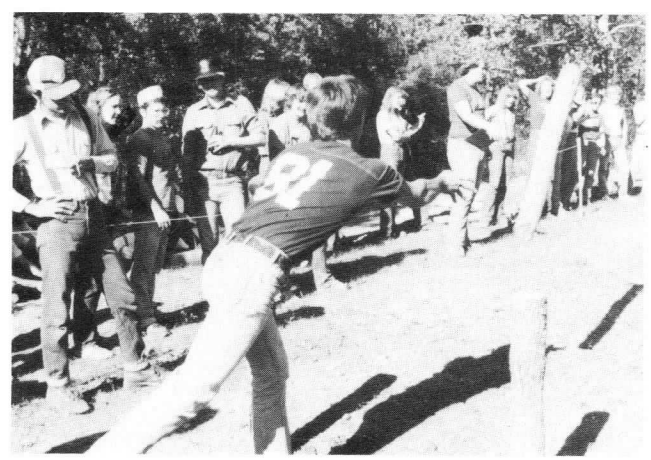
When the dust finally settled, host Missouri had a commanding hold on the first place trophy, and Iowa State, Wisconsin(Madison), and Illinois were tied for last. Illinois took the bearskin home in the end.

On a happier note, the contestants met students and were reunited with old friends from other universities.

We all praised the University of Missouri for their hospitality, good food, and excellent organization of this year's conclave, and anticipate the event at the University of Michigan in Ann Arbor next fall.

Iowa State students can look forward to 1982 when the Midwestern Foresters Conclave is scheduled to take place in Ames. ■





The 1980 Game Banquet

Reinee Eshelman

THE 1980 annual game banquet offered quite the variety of wild game to choose from. There was everything from elk, deer, raccoon and rabbit to goose, duck and a variety of fish. No one went home hungry for there was plenty for all.

Once the guests had become pleasingly full the program began. Reinee Eshelman, emcee, gave a warm welcome and an introduction of the head table, then turned the floor over to those introducing the academic awards.

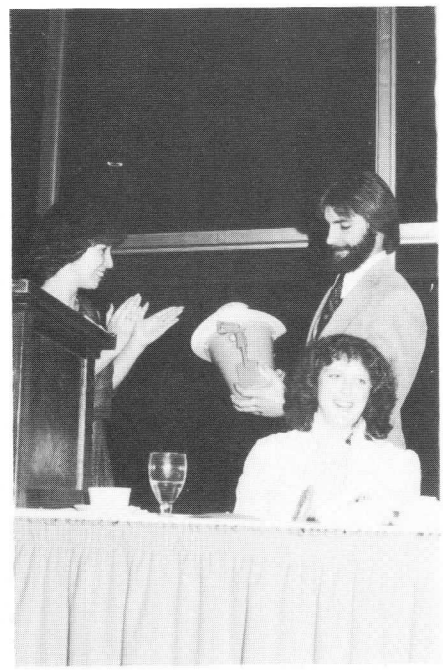
On the lighter side of the awards ceremony was the Most Beloved Instructor Award given by the students to the most deserving professor. This years lucky or unlucky winner, which ever the case may be, was Dr. Richard Schultz.

Following the presentation of awards was the recognition of club officers both old and new. For the new officers it brought moments of anxiety as the winning candidates were announced. No previous clues had been given about who the new officers were.

To round off the evening Gene Hertel, Iowa's State Forester presented us with his speech on Land Use Policy.

At the close of a memorable evening guests made their way homeward to put their pleasingly full bodies to rest.

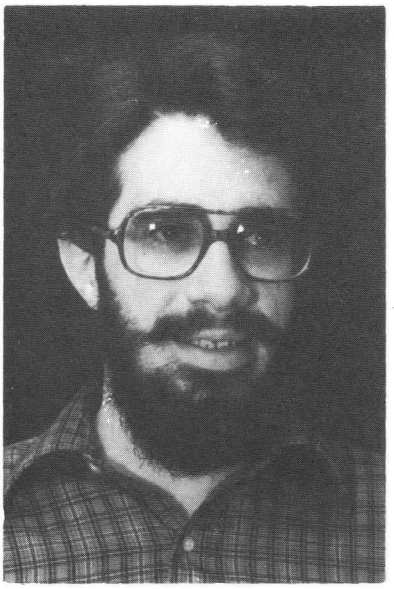
This years meat was donated by: Andy Mitchell, Al Wimmer, Clark Ott, Mark Sandvik, Les Miller, Reinee Eshelman, Julie Thompson and Koral Santman. ■



AWARD	QUALIFICATIONS	RECIPIENT
SAF Award	Those seniors who are also a member of the SAF are eligible for this award. The SAF award is presented to the most outstanding senior on the basis of academic and professional activities and achievement.	Koral Santman
John Milton Cone Award	This award is presented to a top student, usually a junior, who exemplifies the scholarship and dedication of John Milton Cone.	Jo (Heimberger) Mueller
Iowa Hoo Hoo Club Award	This award honors top students at the sophomore or junior level.	Kris Holt Joseph Bornong Bernard Bornong
Xi Sigma Pi— Keith Bauer Award	The Keith A. Bauer Award is presented to the outstanding sophomore in forestry, on the basis of grade-point and participation in forestry activities.	Chris Schnepf
Pack Essay Contest	Charles L. Pack, as a reflection of his own belief in communication skills, established funds at seventeen colleges, one of which is Iowa State University, to support annual awards for essays and articles on forestry. Those forestry students who excel in communications skills are honored by this award. There are two classificaitons of eligibility for this award.	
Freshmen Division:	Awards are made to the top three term papers submitted in Forestry 101 by freshman forestry students.	Karen Mahoney Janice Hamblin Les Miller
Upperclass:	Any sophomore, junior, or senior forestry major can enter. Winners are selected on the basis of written forestry articles which are submitted to the Department Awards and Scholarship Committee.	Nita Rauch Kirsten Held
Northeastern Loggers' Association Scholarship Competition	The Northeastern Loggers' Association sponsors this contest for all forestry schools in its territory. A first and second place award is presented to two juniors in a four year forestry program. Selection is based primarily on the quality of a submitted essay. Other considerations are the student's scholastic record and work experience.	Chris Schnepf

Iowa State Students

CLASS OF 1981



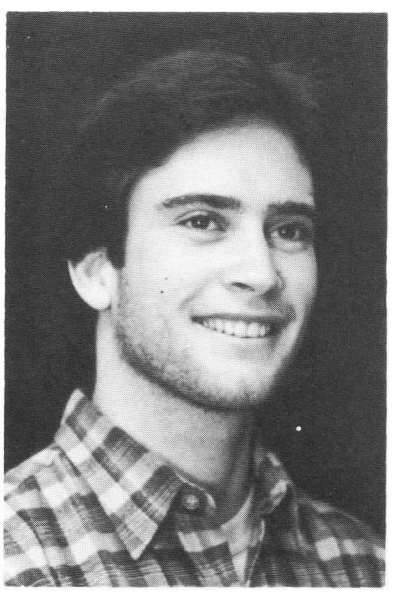
Gary Berger

Rochelle Aneweer
Stout, Iowa

Rochelle graduates the spring of 1981 with a degree in Forest Recreation and a minor in Communication Education Interpretation. She attended summer camp in Greenough, Montana in 1979. During the summer of 1979 after camp, she worked on a timber crew in the Deerlodge National forest in Montana. In 1980, she worked as a Conservation aide at Big Creek State Park in Polk City, Iowa. She has also worked as a Forestry greenhouse research aide at Iowa State University. After graduation, Rochelle hopes to get a job in Park Management. Rochelle has been involved in intramurals and enjoys cross country skiing.

Gary Berger
Sioux City, Iowa

Gary attended summer camp in Greenough, Montana in 1979. He will graduate the spring of 1981 in Forest Management. During the summer of 1980, he worked at the Red Ives Ranger Station, St. Joe National Forest, Avery, Idaho. He was a member of a brush crew in which he helped prepare seed tree harvest sites for burning, cut fire lines around harvested areas and cleared streams of fallen timber. He enjoys flying, hunting, fishing and music.



Steven Boots

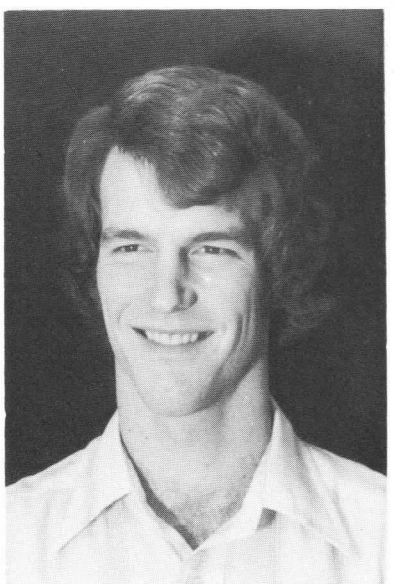
Kurt Bigbee
Ankeny, Iowa

Kurt graduates the summer of 1981 in Forest Products with a minor in IE/I. Ad. He attended summer camp in Greenough, Montana in 1979. During the summers of 1978 and 1979, Kurt worked in Ankeny on a crew in wood frame construction of new homes. After graduation, he would like to either attend graduate school or find a job. He and his wife Lori, would like to settle in the west some day. Kurt is a member of the Forest Products Research Society and attends Ontario Bible Church. He enjoys woodworking, reading, hunting, camping and other outdoor activities.

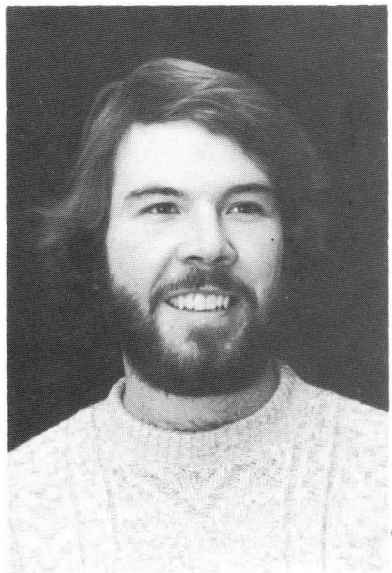
Steven Boots
Atlantic, Iowa

Steven graduates in the spring of 1981 with a degree in Forestry Resource Management and a minor in Wildlife and Biometry. Steven attended summer camp in Greenough, Montana, in 1978, and worked for the North Park Ranger District in Walden, Colorado in 1979-1980 doing timber stand improvement and tree marking. Steven plans to attend graduate school after graduation. While at ISU, Steve was vice-president of Harriman house, and was actively involved in intramural football, wrestling, track and in the Muscular Distrophy Dance Marathon. His hobbies are sports, playing the guitar, hiking, camping and canoeing.

Rochelle Aneweer



Kurt Bigbee



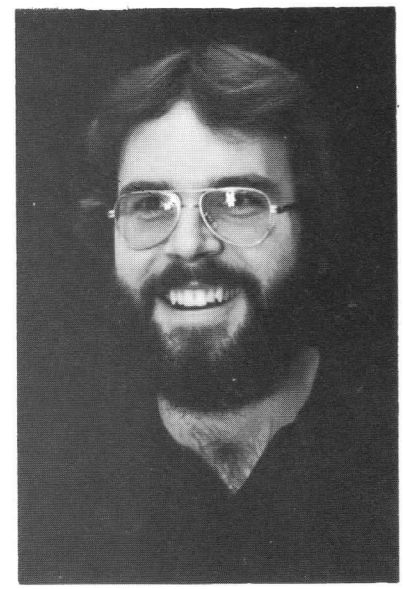
Bernard Bornong

Bernie Bornong
Davenport, Iowa

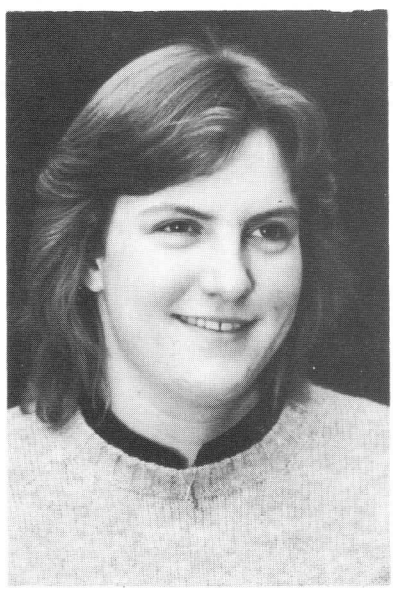
Bernie will graduate this spring in Forest Management, with a minor in Silviculture. During June and July of 1976 he worked as a volunteer for the Student Conservation Association in Zion National Park in Utah. The summer of 1977 was spent as a recreation aide at Idaho Panhandle National Forest. Bernie attended summer camp at Greenough, Montana, in 1978. During the fall of 1978 he worked at Strautman Tree Farm. From June to November of 1979 he worked on a timber sale preparation crew on Bighorn National Forest. He also spent the summer of 1980 at Bighorn. Bernie is active in Forestry Club, Xi Sigma Pi, and intramurals, and enjoys camping and fishing.

Joseph Bornong
Davenport, Iowa

Joe worked on Timber Stand Improvement at the Medicine Bow National Forest in the summer of 1980. Joe is a Forestry Club member, has been active in ISU Dramatic Productions, and has been occasionally involved in various local political and public interest groups. Joe attended the Lubrecht Forestry Camp at Greenough, Montana, in 1979. He will graduate in the spring with a major in Forest Resource Management and a minor in Political and Environmental Studies. He plans to attend law school.



Joseph Bornong



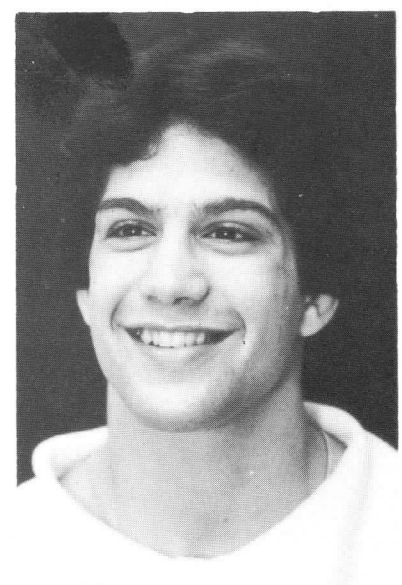
Marietjie Burger

Marietjie Burger
Ames, Iowa

Marietjie graduates this spring in Forest Resource Management minoring in Soil and Water Management and French. She attended summer camp at Greenough, Montana in 1979. During the summers of 1978 and 1979, she had been research assistant for the Iowa State Water Resources Research Institute in the greenhouses. The summer of 1980 was spent on the Fremont National Forest as a member of a Timber Presale Crew. Marietjie hopes to work in the area of Resource Management in the United States and abroad. She has been an Iowa State Varsity Swimmer for four years, member of Forestry Club for two years, Forestry Club seedling sale chairperson, Alpha Phi Sorority, Ames Forester Committee and recipient of the Muriel Macbride Memorial Swimming Scholarship. She enjoys sports, traveling, reading and outdoor activities.

Dan DiCarlo
Pittsburgh, Pennsylvania

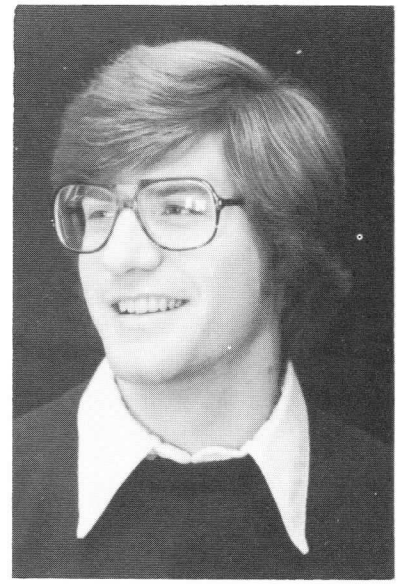
Dan attended the 1979 summer camp in Greenough, Montana. He graduates the spring of 1981 in Forest Products with a minor in I.E./I. Ad. He has worked for the Jason Association Transmission Pole Maintenance. After graduation, he hopes to work in production, product development, quality control or sales and marketing. He has been active as an ISU Volunteer and enjoys scuba diving, backpacking and cross country skiing.



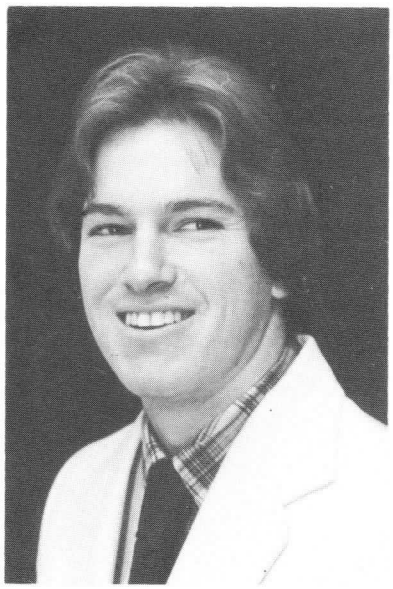
Dan DiCarlo

David Everson
Springville, Iowa

David graduates the first summer session of 1981 in Forest Products and a minor in I AD/IE. He attended summer camp in Greenough, Montana in 1978. David worked on the Brayton Memorial Forest in Hopkinton, Iowa during the summer of 1979. He conducted a black walnut survey. After graduation he hopes to obtain a job in the paper industry. He was member of Hanson house, senior representative and intramural sports chairman. He enjoys backpacking, fishing, skiing, and woodworking projects.



David Everson



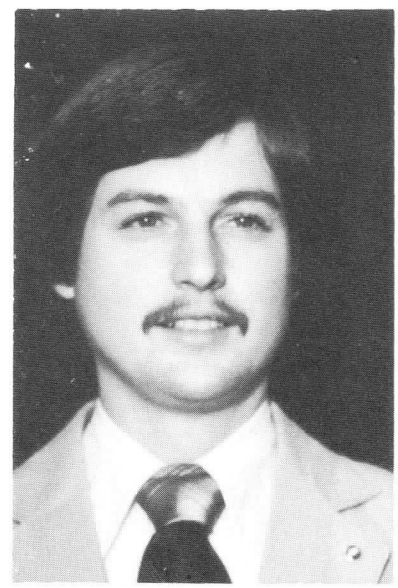
Brent Foster

Brent Foster
Mt. Pleasant, Iowa

Brent graduates the spring of 1981 with a Bachelor's degree in Forest Resource Management and a minor in Business. Brent attended summer camp in Greenough, Montana in 1978. During the summer of 1979, Brent worked for a hardwood sawmill in Fort Madison, Iowa. And during 1980, he worked for the Forest Service in Paisley, Oregon doing timber pre-sale work. After he graduates, Brent hopes to get a job in Paisley, Oregon. Brent was involved in intramural sports while at Iowa State. He also enjoys fly fishing and backpacking.

Randy Goerndt
Huxley, Iowa

Randy graduates the winter of 1981 in Forest Resource Management with a minor in Forest Biology. He attended summer camp in Greenough, Montana in 1978. For the past two years, Randy has worked as a Forestry Research Aide here at Iowa State under Dr. Hall doing intensive culture research and tree improvement. After graduation, he hopes to get a job in the forest industry in intensive culture related research or woodland management. During his college career, Randy was a member of Forestry club, Xi Sigma Pi and Sigma Gamma Delta. He enjoys reading and taxidermy.



Randy Goenrdt

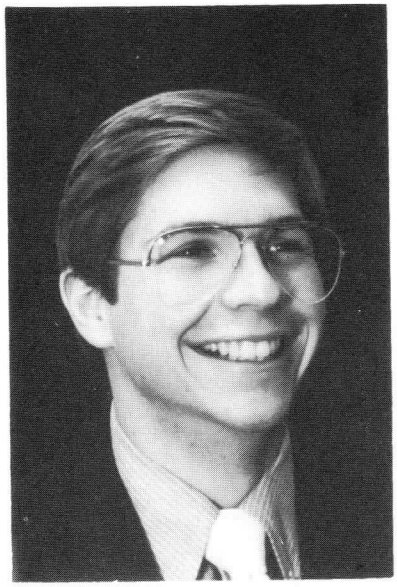
photo
not
available

Daniel Gruver

Daniel W. Gruver
Austin, Texas

Dan attended summer camp at Greenough, Montana, in 1977. During the summer of 1978 he worked at Routt National Forest in timber marking, cruising, traversing, and firefighting. The summer and fall of 1979 was also spent at Routt. Dan enjoys running, travelling, backpacking, downhill skiing, and sailing. He is a member of AKL fraternity. Dan will graduate this spring in Resource Management, minoring in Plant Biology. He plans to work for the Forest Service or in private industry, and eventually wants to enterprise a business with his father.

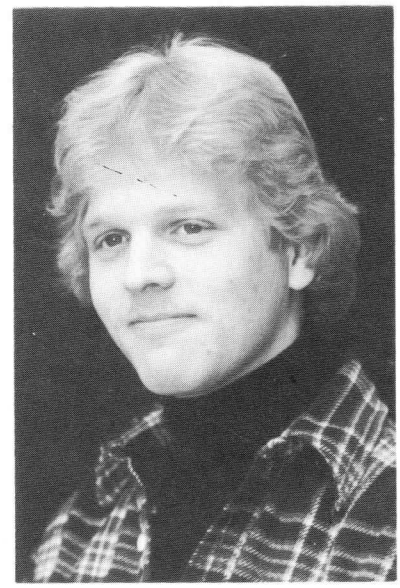
For yesterday is but a dream and tomorrow is only a vision but today well lived makes yesterday a dream of happiness and every tomorrow a vision of hope.



Daniel Harker
Downers Grove, Illinois

Dan attended summer camp in Greenough, Montana in 1979. He will graduate the spring of 1981 in Forest Products with a minor in Business Administration. Dan has assisted in research work on the anatomical characteristics of hybrid poplars at Iowa State University. After graduation, he hopes to get a job in plant production or product design in industry.

Daniel Harker



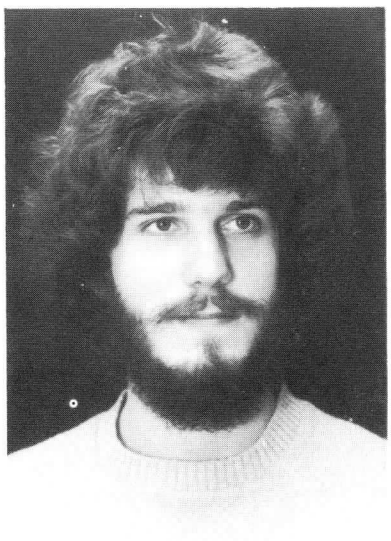
Bruce L. Herzberg
Creston, Iowa

Bruce attended summer camp in 1979 at Greenough, Montana. He worked for Jason Assoc. Inc. Wood Technologists and Consultants during the summer of 1980. He was a four-year member and vice president of the ISU Rugby Club, and a member of the Sports Club Council. He will graduate in the Spring in Forest Products, with a minor in Business, and plans to attend graduate school. Bruce enjoys woodworking, cabinetmaking, and camping.

Bruce Herzberg

Perhaps the most valuable result of all education is the ability to make yourself do the thing you have to do, when it ought to be done, whether you like it or not . . . however early a man's training begins, it is probably the last lesson that he learns thoroughly.

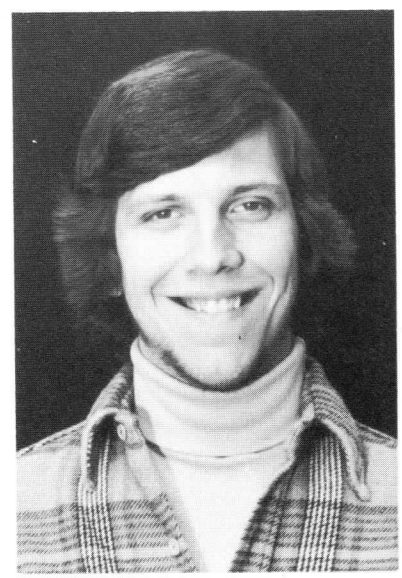
Thomas Henry Huxley



Bill Hildebrandt
West Simsbury, Connecticut

After Bill finishes his B.S. in Forest Products in the summer of 1981 he plans to relax. He attended summer camp at Greenough, Montana, in 1978. Afterwards he worked for the Forest Service at the Condon Work Station in Montana on Stage II inventory. Bill was the 1980-1981 Forestry Club treasurer.

Bill Hildebrandt



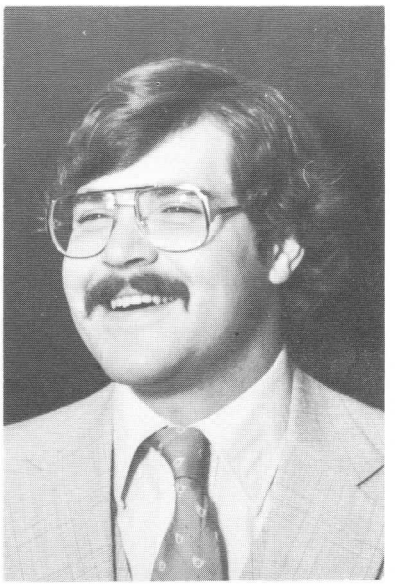
Kris Holt
St. Louis, Missouri

Kris graduates this spring in Forest Products with a minor in Wood Science. He will be attending graduate school to obtain his Masters in Wood Products and eventually go into research. He attended summer camp in Greenough, Montana in 1979. After camp, he got a job doing contract thinning on a private forest and in 1980 he worked in a lab making paper out of cankered wood. Kris has been a member of Sigma Alpha Epsilon here at Iowa State University and at Washington University in St. Louis. He has been a member of Forestry Club and on the Ames Forester for two years. Kris has also been a member of two freshman honoraries and a member of the Xi Sigma Pi forestry honor fraternity. He enjoys camping, backpacking, hiking, caving and canoeing.

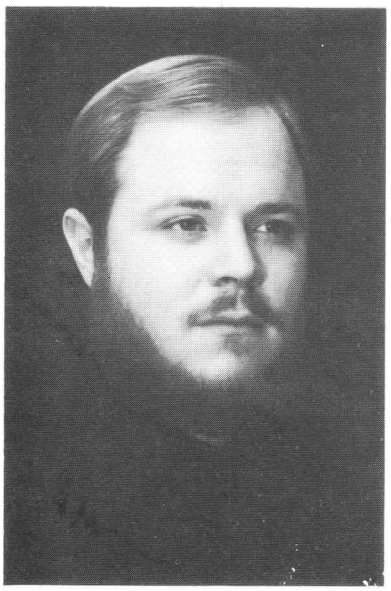
Kris Holt

Klint Karl Johnson
Mallard, Iowa

Klint attended summer camp in Greenough, Montana in 1978. He graduates the summer of 1981 with a degree in Forest Products and a minor in Business. During the summer of 1979, Klint worked for Gamble Brothers Inc. in Louisville, Kentucky testing glues for a replacement glue being used in the production of kitchen cabinet doors. After graduation, he hopes to get a job in the field of sales or distribution of forest products. Klint was a member of Forestry Club for two years. He also enjoys photography.



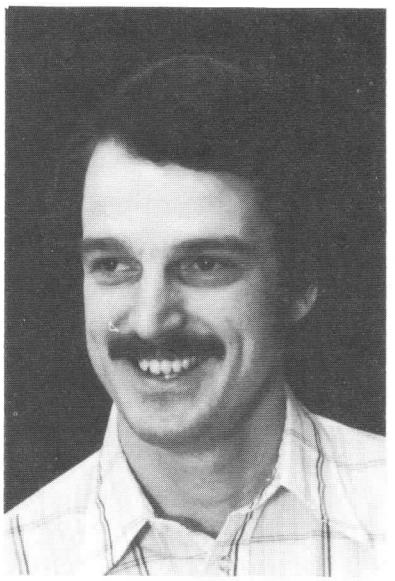
Klint Johnson



Stephen Keys

StephenKeys
Marshalltown,Iowa
Wichita,Kansas

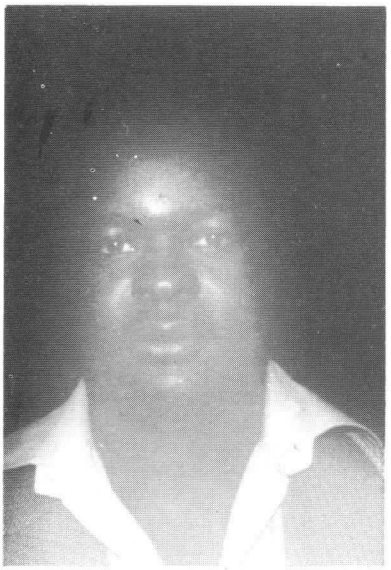
Steve graduates the spring of 1981 with a degree in Forestry Recreation and a minor in Planning and Design in Landscape Architecture. He attended summer camp in Greenough, Montana in 1979. He has worked at Big Creek State Park in Polk City, Iowa for the Iowa Conservation Commission from June 78-Nov. 78; May 79, July 79-Jan. 80; May 80-Oct. 80. His jobs included cleaning restrooms, mowing, trimming, garbage collection, painting, small construction projects including—fences, gates, signs, picnic tables, interior building remodeling—designing a nature trail, compiling a history of construction and policies for park, helped organize and supervise Y.C.C., P.R. work, law enforcement, and equipment maintenance and repair. After graduation, Steve hopes to find a job in the area of recreational development, planning or management or to work in the area of educating the public about the need for environmental protection and preservation. There is also a possibility of continuing in school working toward a Masters degree in Landscape Architecture. While attending Iowa State, Steve has been involved in G.S.B. as Director of Traffic and Transportation; student member on University Traffic committee; student member on Traffic Appeals Board; G.S.B. Traffic and Transportation Committee; intramural softball, basketball and Forestry Club. His hobbies are woodworkingandmotorcycleriding.



Don Kuhle

Don Phillip Kuhle
Dubuque, Iowa

Don graduates the winter of 1981 in Forest Management with a minor in Engineering. He attended summer camp in Greenough, Montana in 1979. During the summer of 1980, Don worked for the U.S. Army Corps of Engineers in Fort Peck, Montana cutting and trimming trees. He plans to work after graduation. He enjoys archery and fishing.



Kennedy Kujinga

Kumbirai Kennedy Kujinga
Fort Victoria, Zimbabwe

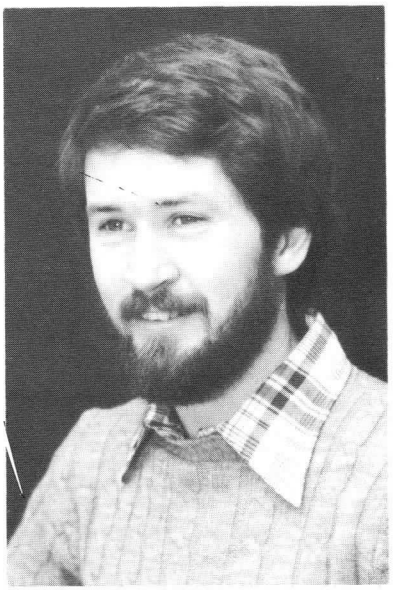
Kennedy attended summer camp in Greenough, Montana in 1979. He will graduate the spring of 1981 in Forest Management with a minor in Business. During the summer of 1977 and 1978, he was a logging contract supervisor in Cyprus. After graduation, he plans to attend graduate school. He enjoys traveling.

Grant me the serenity to accept the things I can not change, courage to change the things I can and wisdom to know the difference.

Jo Ellen Mueller
Dexter, Iowa

Jo Ellen attended summer camp in 1979 at Greenough, Montana. She is a member of Forestry Club and SAF, president of Xi Sigma Pi, Ag Council Representative, Business Manager of the 1980 Ames Forester, and co-editor of the 1981 Ames Forester. She enjoys canoeing, photography, backpacking, water skiing, and other outdoor activities. She has worked at Pammel State Park (Winterset, Iowa), and for the Madison County Conservation Board. After receiving a B.S. in the spring in Forest Resource Management, she hopes to work in the Midwest for the Soil Conservation Service, for a county conservation board, or at a state forest. Working in a foreign country is also a possibility.

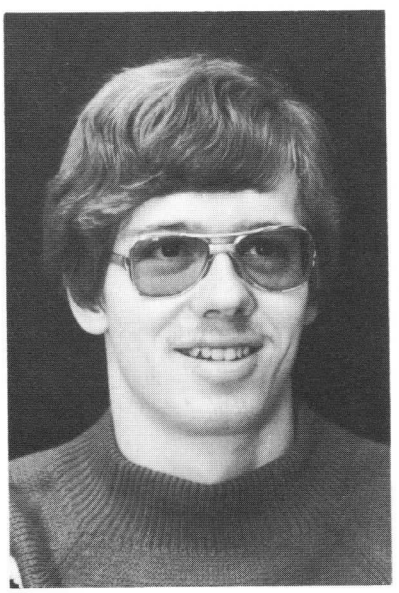
Jo Ellen Mueller



John Parsons
Newton, Iowa

John has worked for the Marshall (1978) and Jasper (1980) County conservation boards in Iowa. He hopes to work as a forester in Iowa after graduating in the spring with a degree in Forest Resource Management and a minor in Environmental Studies. He attended summer camp at Greenough, Montana, in 1979, and enjoys hunting, fishing, and photography.

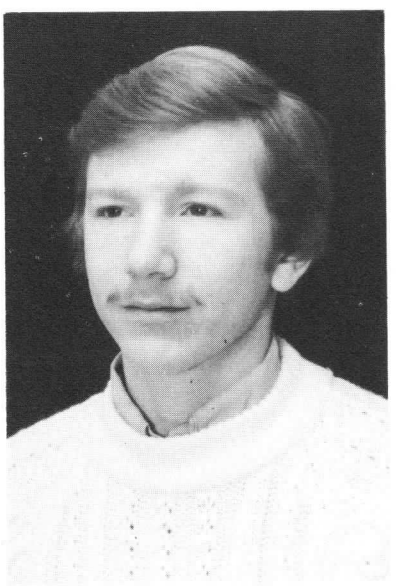
John Parsons



John Potter
Harlan, Iowa

John went to Lubrecht Forestry Camp in 1979. He graduates this spring with a B.S. in Forest Products and a minor in Timber Products Business. After graduation, he hopes to get a job in products, eventually settling somewhere in the Pacific Northwest. During the summer of 1980, John worked for the Osmose Wood Preserving Company in Minnesota. John enjoys collecting literature and photos of old cars and trucks.

John Potter



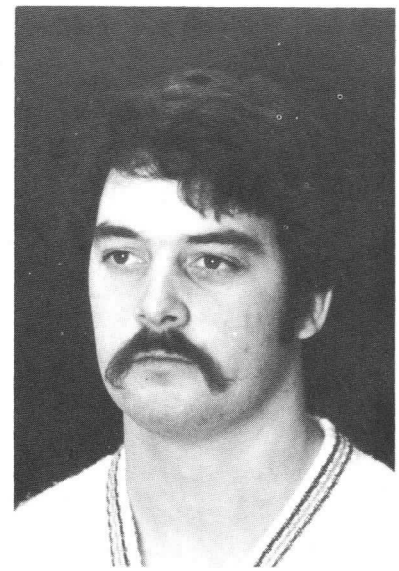
Shaun Reilly
Algona, Iowa

Shaun is majoring and minoring in Forest Recreation and will graduate spring 1981. He attended summer camp in Greenough, Montana in 1979. During the summer of 1980, he worked at Big Creek State Park doing general maintenance, visitor surveys, park improvement and park patrol. After graduation, he hopes to find a job in forestry recreation in a state or national park. He has been active in I.S.U. intramurals.

Shaun Reilly

Mike Scanlon
Marion, Iowa

Mike attended summer camp in Greenough, Montana in 1979. He will graduate spring 1981 in Forest Management with a minor in Fire Protection. During the summers of 1979 and 1980, he worked in Pierce, Idaho on a brush disposal crew and as a sawyer on the brush crew. Mike plans to be married in December and for the next two years help to put his wife through school. He has been a four year member of the Forestry club and the Midwest Forester's Conclave. He was also the Forestry Club treasurer for one year and a member of Xi Sigma Pi.



Mike Scanlon

photo not available

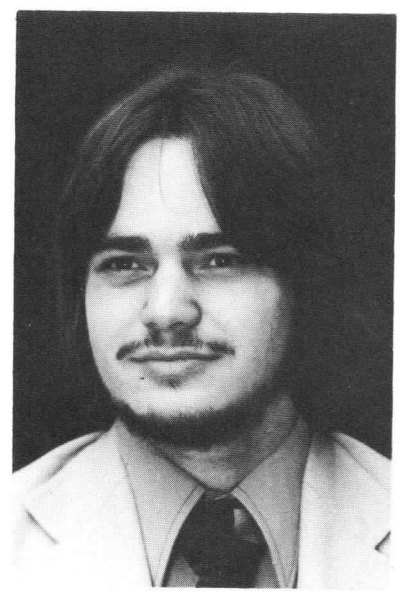
Eric Shmidt

Eric Schmidt
Long Grove, Iowa

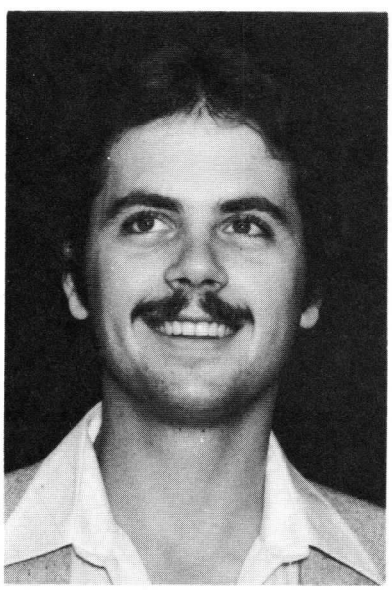
Eric attended summer camp in Greenough, Montana in 1978. He will graduate the spring of 1981 in Forest Management with a minor in History. During the summer of 1979, he worked for the Bureau of Land Management in Wyoming doing range surveying. In 1980, he worked for the Forest Service in Oregon doing forest cruising and marking. After graduation, he plans to enter the Navy-Flight Officer Program. Eric was in the 1980 Muscular Dystropy Dance Marathon and enjoys running and swimming.

Steven M. Schumacher
Minneapolis, Minnesota

Steve went to Lubrecht Forestry Camp in 1979. During the year he worked at the Strautman Tree Farm. The summer of 1980 was spent working for Polk County in stand improvement. He will graduate this spring in Resource Management, minoring in Silviculture/Forest Biology, and would like to work in government or private industry. Steve is a member of Forestry Club, SAF, and Friends of the Boundary Waters. He enjoys backpacking, biking, camping, and climbing.



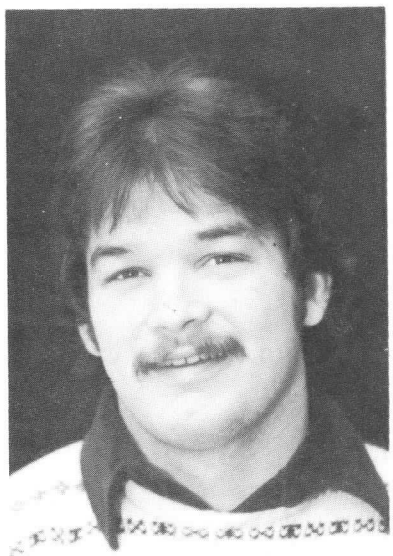
Steve Schumacher



Douglas Seela

Douglas Seela
Fairborn, Ohio

Doug attended summer camp at Greenough, Montana, in 1979. He will graduate with a major in Forest Resource Management and a minor in Range Management. He has worked as a Forestry Aide for the Forest Service in the Bighorn Mountains and in the Black Hills, spent a summer on a thinning crew in Ovando, Montana, and manages 600 acres of family-owned timber in Iowa. His hobbies include camping, canoeing, and travelling. He plans a career in Forest Resource and Range Management.



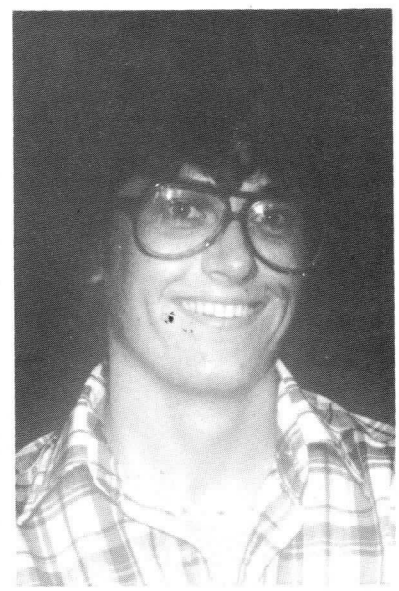
Guy Thomas, Jr.

Guy Thomas Jr.
Council Bluffs, Iowa

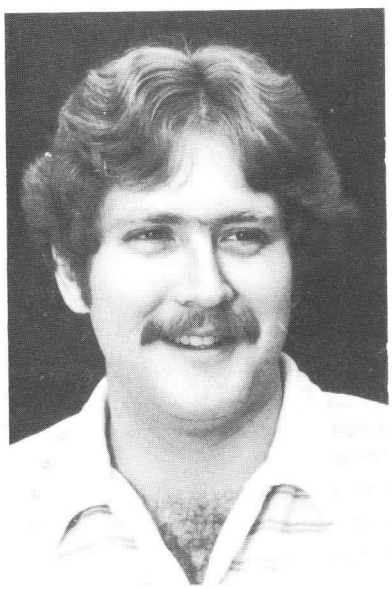
Guy worked for Becker and Beltrami Counties in Minnesota surveying plantations during the summer of 1980. Guy attended summer camp at Greenough, Montana in 1979. He will graduate this spring in Forest Resource Management with a minor in Business. He would like to work in Minnesota or go into a partnership with his father. Guy enjoys woodcrafts, hiking, motorcycles and he is involved with the Rugby club here at Iowa State.

David J. Vales
Elmhurst, Illinois

David will graduate during the summer of 1981 with two B.S. degrees; one in Forestry and the other in Fisheries and Wildlife Biology. He will also have a minor in FWB. He attended summer camp in Greenough, Montana in 1979. During the summers of 1978 and 1980, Dave worked for the Forest Preserve District of DuPage County. In 1978 he did field and desk work on four lake contour maps, wildlife haven work, fish sampling, water quality testing and prairie renovation and wrote articles. In 1980, he was a Seasonal Naturalist and Fisheries Biologist. After graduation, David wants to work for 9 months then pursue a M.S. and later a Ph.D. degree in Forest Wildlife Habitat Management. While attending Iowa State, David has been a member of the Sports Council holding the positions of Council Representative and club treasurer. He was also a member of the ISU Canoe club and Ski club. He was also his dorm floor treasurer and on the UDA Board of Review. He was also Ag Council Rep., President of Fisheries and Wildlife Biology Club-ISU Student Chapter of The Wildlife Society, FWB Club Rep., Vice President of Ag Council and a member of Forestry Club. David has also received many honors, such as: Dean's list 6 quarters, Spring 1978 Scholarship Awards Dinner for upper 2% in the college, Moorman Manufacturing Company Scholarship, "Ding" Darling Scholarship, Wm. A. and Rosalie Rathbone Craft Scholarship, Xi Sigma Pi Forestry Honor Society, Phi Kappa Phi Honorary Society, Cardinal Key Honorary, and he was also included in the 1979 issue of *Outstanding Names and Faces In America* book. David also enjoys canoeing, skiing, hunting, fishing, photography, camping, trap shooting, and writing.



David Vales



Al Weber

Al Weber
Fairbank, Iowa

Al is majoring in Forest Management and minoring in Soils and will graduate spring 1981. Al attended summer camp in Greenough, Montana in 1978. In 1979, he worked for the BLM in Salmon, Idaho on a thinning crew and inventory crew. In 1980, he worked for the Forest Service in Paisley, Oregon cruising timber and marking trees. After graduation, he hopes to find a job with the federal or state government in forestry and soil conservation. Al has been president, secretary and treasurer of Bergman house, a member and president of Forestry Club, Christmas tree sales chairman, and an SAF member for three years. He enjoys sports, woodworking and the outdoors.

GRADUATE STUDENTS

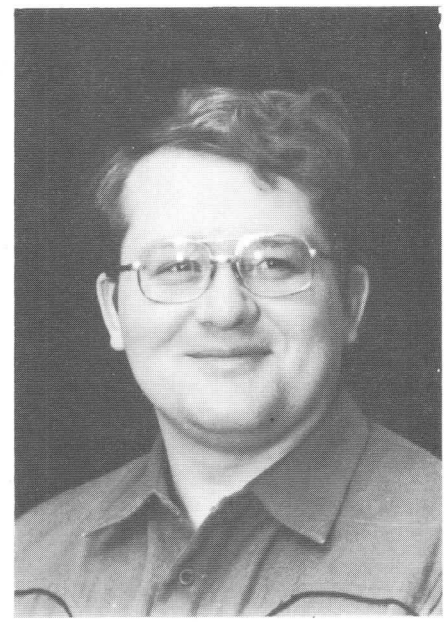
SMALL but mighty is one way you could describe the Forestry Graduates here at Iowa State University. Their members are small, currently only 22, but their interests are mighty.

For academic interest the graduates have a choice of five areas of specialization for a masters candidate and for the Ph.D. candidate. Another not-so-common choice is the non-degree program, which this year is being used. Presently, the enrollment looks as follows: Masters, Administration and Management, 3 enrollees; Forest Biology, 4; Forest Biometry, 1; Forest Economics and Marketing, 4; Wood Science, 3. In the Ph.D. category under Forest Biology, there are 6 enrollees, with none in Forest Biometry or Forest Economics. There is one graduate under the non-degree program with Biology as an emphasis.

On the lighter side of the graduate students, lies an interest both in the F.G.S.A. (Forestry Graduate Student Association) and in a number of intramural activities. The F.G.S.A. is a relatively informal group led in the 1980-1981 school term by President Terry Robinson, Treasurer George Mortensen, and Graduate Senate Representative Rita Sonnelitter. These individuals act as liasons between the top organizaitonal administrators and the graduate students.

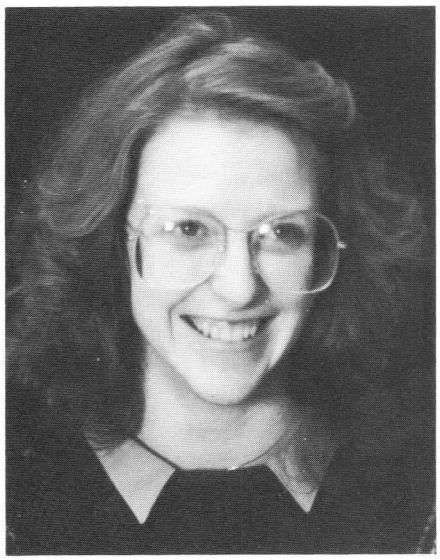
Also mentioned were the intramural activities. This years activities included softball, football, volleyball and intertube waterpolo. The football team did an outstanding job by earning the title of "All University Champs". The intertube waterpolo team also did a fine job by making it to the finals competition.

This increase in social and academic interest at the graduate level has become a focal point for the Forestry Department. Much consideration has also been given to graduate participation in fund raising projects for the Trees for Tomorrow program. ■



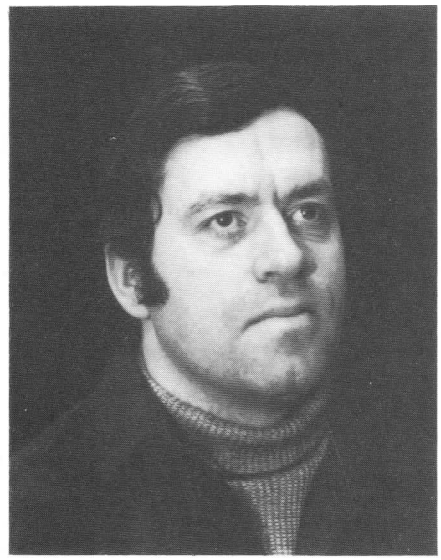
Kim D. Coder
Ogden, Iowa

Kim, the Assistant Extension Forester at Iowa State University, received an A.A. in Environmental Science (1976) at DMACC. He also has a B.S. in Forest Management (1979) and an M.S. in Forest Biology (1980) from Iowa State University. Kim plans to job-hunt, or he may work on a Doctorate degree.



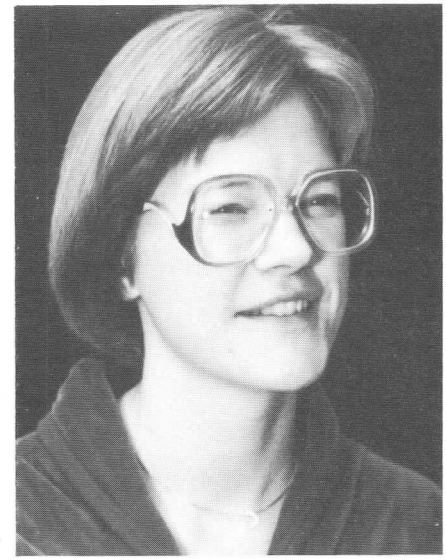
Reinee Eshelman
New Virginia, Iowa

Reinee earned a B.S. in Forest Recreation and Agricultural Education Extension from ISU in 1980. She is currently designing a computerized street tree inventory system and hopes to eventually have a job in extension.



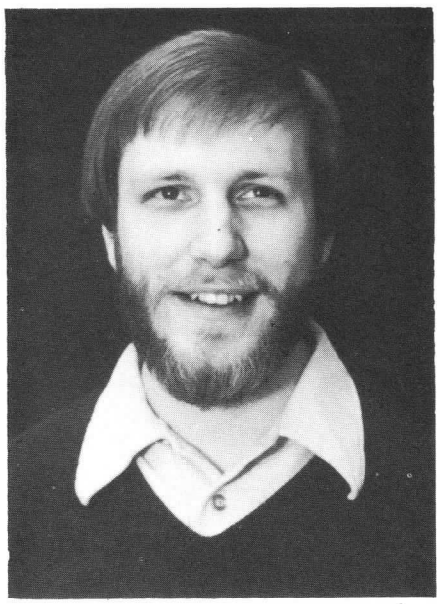
Roger Hanna
Cascade, Iowa

In 1969, Roger received a B.S. in Forest Management from Iowa State University and in 1972, he received a B.S. in Farm Operations from I.S.U., also. Before coming to I.S.U., he was a commissioned officer in the U.S. Navy. Roger has also worked for Georgia Pacific in a corrugated box factory. He is mainly interested in personnel management and working with private landowners. He hopes to get a position in either management position in a company or extension work.



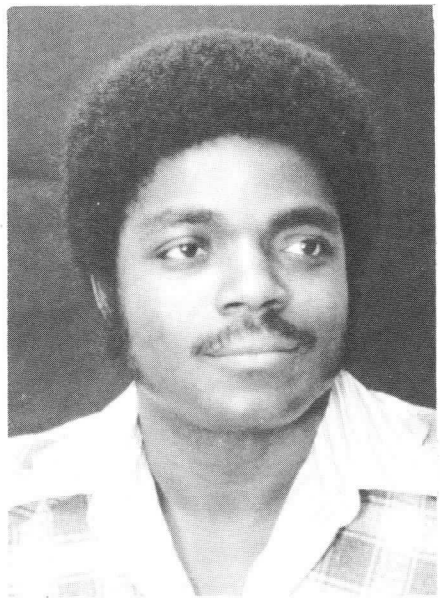
Sue Hatz
Seattle, Washington

Sue achieved a B.S. in Forest Resources at the University of Washington (1975). Before coming to ISU, she managed a containerized tree seedling facility for the Makah Indian tribe in Neah Bay, Washington. Sue plans to return to the west coast and manage a large containerized tree seedling nursery.



Greogry Miller
Canton, Ohio

Greg got his B.S. and M.S. in Horticulture from Ohio State University. He plans to research and teach tree genetics and breeding.

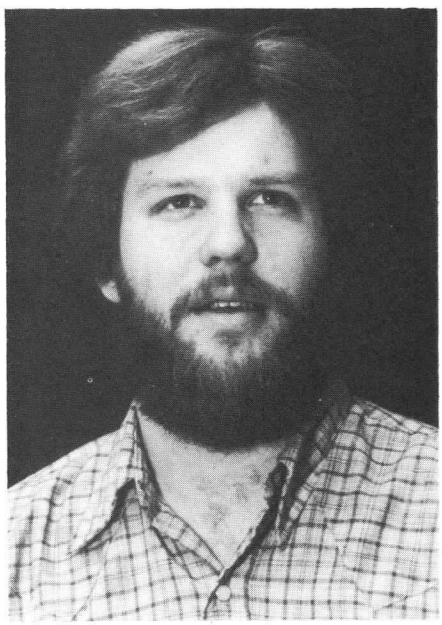


Francis Nwonwu
Oba, Nigeria

In 1974, Francis received a B.S. in Agricultural Economics and Extension from the University of Ibadan in Nigeria. He has an M.S. in Forest Economics and Marketing (1981) from ISU. Before coming to Iowa State, he worked at the Forestry Research Institute of Nigeria, and he hopes to return to his position there.

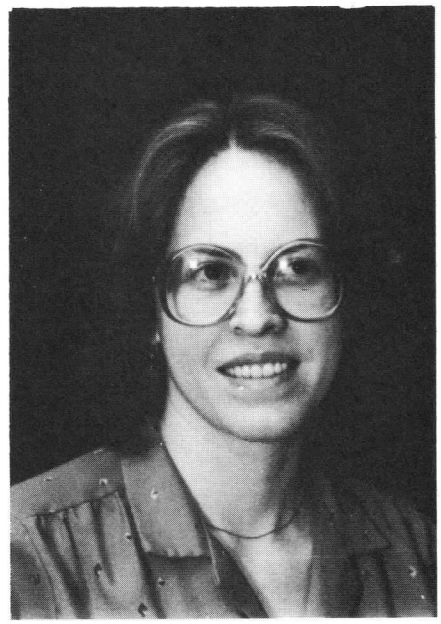
Doris Kathleen Patten
Catonsville, Maryland

Kathy received her B.S. in Conservation and Resource Management in 1972, and an M.S. in Soil Microbiology and Biochemistry in 1978 at the University of Maryland. She plans to get her Ph.D. in Forest Soils in 1983. She would like to teach and do research at the college level in forest ecology and soils.



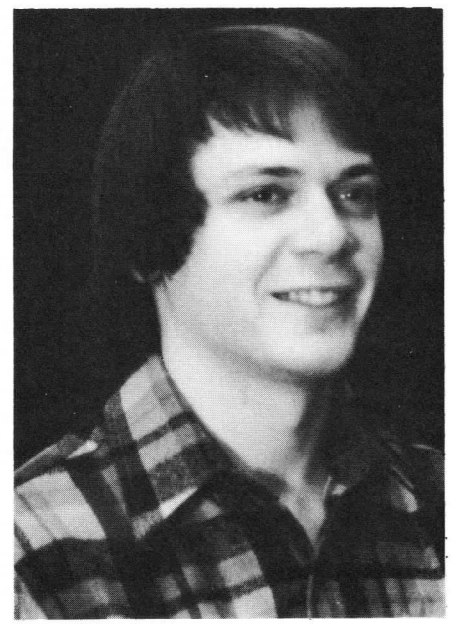
Terry Robison
State College, Pennsylvania

Terry got a B.S. from Penn State in Forest Science. He plans to get his M.S. and Doctorate from Iowa State University and then get a job.



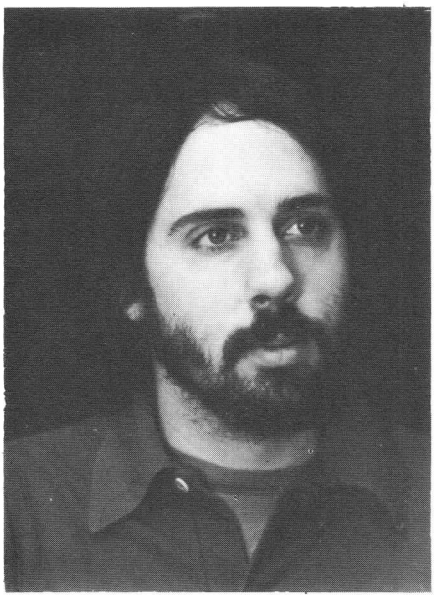
Rita S. Sonnelitter
East Aurora, New York

Rita received her B.A. in Biology/Psychology/Secondary Education in 1973, and her M.S. in Horticulture in 1978. She plans to get her Ph.D. in Forestry/Plant Pathology/Pest Management in 1983, and then move to The Netherlands.



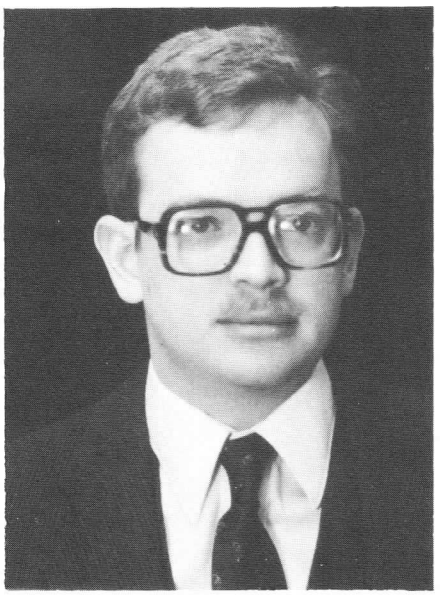
Richard Straight
Webster City, Iowa

Richard received his B.S. in Forestry from Iowa State in 1980. He is presently working on research with Dr. Countryman on small woodlot management and is in the process of obtaining his M.S. in Forest Management. He plans to work with state forestry in the midwest or out east.



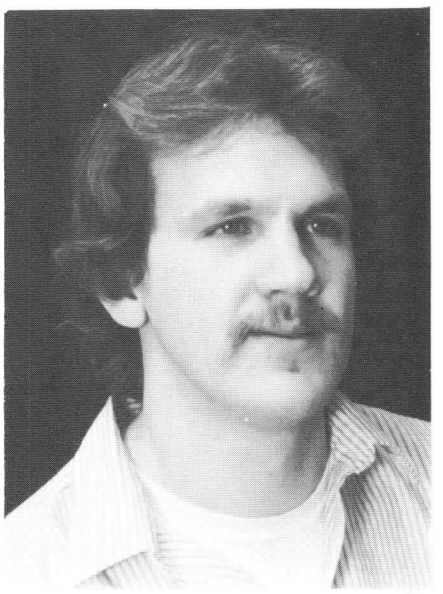
William Tawney
South Burlington, Vermont

Bill received a B.S. in Forestry from the University of Vermont (1977) and an M.S. in Forest Biology from the University of Georgia in Athens (1980). He plans to teach and/or do research work in Forest Biology.



Tim Trachsel
Milton, Iowa

Tim graduated from Iowa State University in May of 1976 with a B.S. degree in Forestry. His work/research experience includes press drying cottonwood and using the Saw Dry Rip method to produce cottonwood studs. His future plans include joining the Air Force.



Paul Winistorfer
Marion, Iowa

Paul acquired his B.S. in 1978 through the ISU Honors Program in Industrial Engineering. He plans to pursue a Ph.D. in forestry.

Secretaries

Standing from left to right: Rose Turner, Graduate Secretary for 4 years; Debbie Pederson, Department Head Secretary for 7 years; sitting: Beth Williams, Undergraduate Advising Secretary for 2 years.

SAF NATIONAL CONVENTION

Society of American Foresters Convention

by Anita Montag

THE SAF National Convention was held in Spokane, Washington on October 5-8, 1980. The topic for the convention was "Land Use Allocation: Process, People, Politics, Professionals." Representatives from Iowa State University who attended the convention were Dr. and Mrs. Thomson, and seven students. Those students included Nita Rauch, recently graduated; Seniors, Connie Reints, Carole Gillespie, and Mike Scanlon; Juniors, Michelle Numella, and Anita Montag; and Freshman, Sharon Baas.

The convention provided the opportunity for the students to meet and talk to practicing foresters, and to meet some of the I.S.U. alumni. Provided entertainment included a presentation of the musical comedy "Li'l Abner." Unusually pleasant weather marked the convention. It was warm and sunny, instead of the normally cool fall weather we had expected.

During the banquet that marked the end of the convention, Kirsten Held stepped forward to accept the Students Publications Award. The *1980 Ames Forester*, edited by Kristen, was awarded Third Place. Connie Reints was also given recognition for being the first woman to cross the finish line in the Foresters Run.

On the drive home we all agreed that despite the stacked up homework, and the delayed tests, the convention was well worth the week off of school. ■

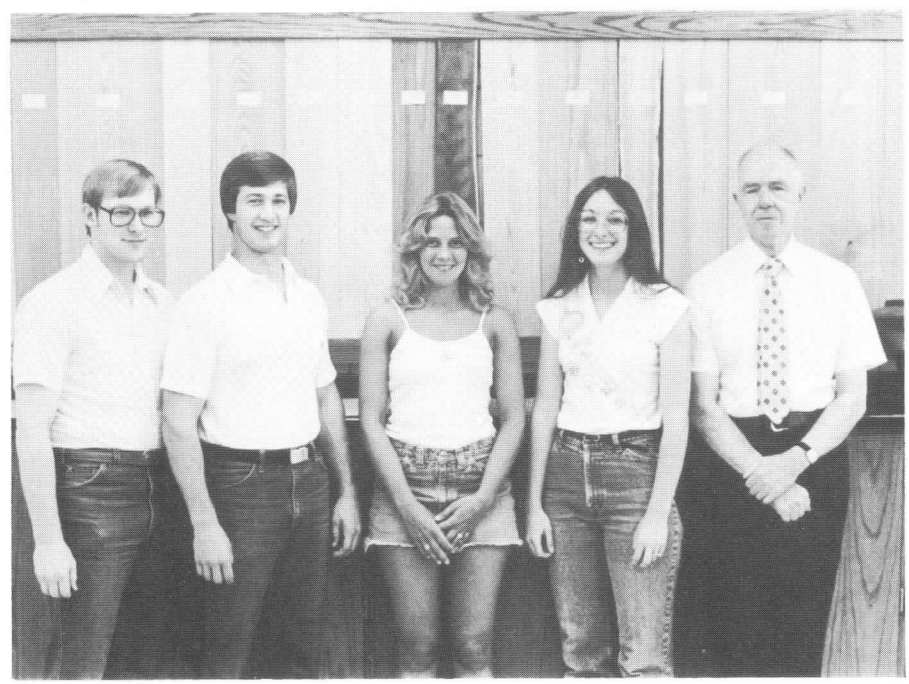
XI SIGMA PI

by Jo Ellen Mueller

THE Xi Sigma Pi society had its beginnings back in 1908 at the University of Washington to encourage and foster high standards of scholarship and personal performance in the forestry and natural resource profession. Since that time the organizaiton has grown, with chapters being formed at numerous universities all over the United States.

At Iowa State University the Alpha Gamma Chapter was established in 1965. Since then, juniors and above whose excellence in the field of natural resource management and who show those character traits indicative of high performance potential, have been invited to become members.

Four officers are elected each year. Currently they are: Chapter Forester—Jo Ellen Mueller, Associate Forester—Dave Peters, Secretary/Fiscal Agent—Michelle Hutzell, and Ranger—George Mortenson. Our faculty advisor is Dr. Fred Hopkins. ■



Front Row: Dr. Steve Jungst, Jerry Olson, Eric Johnson, Matthew Pflug, Herman Vandervaarst, Jim Healey, Julie Goodspeed. Second Row: Jodi Meyer, Julie Kendall, Karen Mahoney, Donna Grosz, Annette Fenton, Bill Tan, Dr. Joe Colletti, Linda Gray, Jim Schone. Third Row: Wayne Stoelting, Clint Kyhl, Lon Accola, Deb Steig, Laura Schilling, Priscilla Licht, Dave Peters, Michelle Nummela, Gary Bahr, Frank Mueller, Dr. Richard Schultz. Fourth Row: Phillip Stocks, Paul Reid, Robert Trent, Les Miller, Steve Wolf, Jeff Misek, Steve Rinella, John Kaiser, Scott Ridge. Fifth Row: Bill Sivertsen, Tom Lynch, Robert Patton, Jeff Prestemon, Jeff Walters. Sixth Row: Gail Hall, Pam Nadolsky.

Summer Camp 1980

by Linda Gray, Gail Hall, Deb Steig

FOR the fourth consecutive summer, the Lubrecht Forestry Camp near Missoula, Montana was the "escape" (?) of 43 Iowa State forestry students. This camp is owned and operated by the University of Montana and is set on experimental forest land.

The western Montana scenery was an enjoyable change from Iowa's farmland. The extreme differences in wildlife was especially noted as the elusive Jack-a-lope was spotted several times.

Along with the different scenery and wildlife was the unpredictable climatic conditions. Very opposite of Iowa's scorching summers, the weather put a limit on our activities by continuous cold and rain. During the first week of camp, it rained everyday at exactly 4:30 p.m.—about the time class was usually dismissed!

On June 12th, everyone had an opportunity to see just how wet and cold the weather really was when we traversed and performed biology fieldwork during a three-hour downpour. The cabins that night echoed with complaints as we wrung out clothes and squeezed boots dry. However, that evening while enjoying one of many delicious meals, we were congratulated on the attitude of professionalism that we had shown throughout the day. When we finally accepted the fact that we were actually being praised, it somehow didn't seem so cold and wet as we walked back from the mess hall to our cabins.

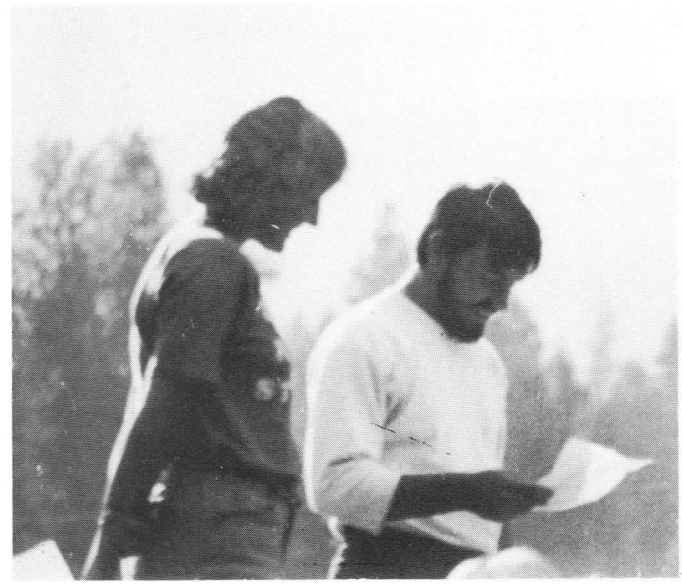
This summer, our camp director was Dr. Steve Jungst. Besides directing the camp, Dr. Jungst also taught the Forest Measurements class.

Another of our illustrious instructors was Dr. Joe Colletti. Dr. Colletti led us on many infamous mill tours as part of the Wood Utilization course. With his uncanny accuracy at horse shoes, "Joe Cool" was envied by all!

Teaching Forest Biology was Dr. Richard Schultz. Although "Schultzie" kept us very busy, he still managed to play a fantastic third base!

The Multiple Use Operations class was taught by all three instructors who were collectively known as the "Three Stooges". When not teaching together, these three kept their freindship strong by engaging in leisurely games of frisbee golf in the evenings.

With three very competent professors to share their knowledge with us, time officially spent in class was



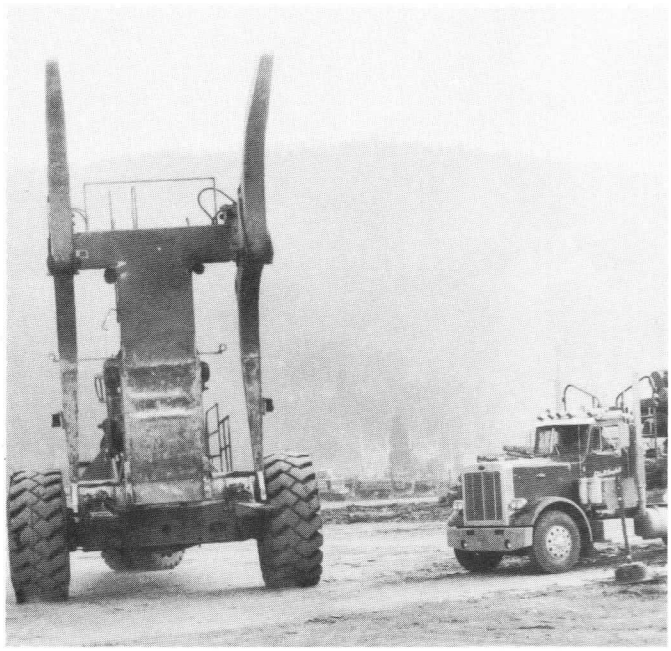
filled with many interesting experiences. One of our most exciting experiences in the field was plucking pine needles for a biomass experiment in Forest Biology. Although many grumblings were heard during and after the plucking, we did actually learn something. We'd like to take this opportunity now to show our appreciation, Dr. Schultz: from the bottoms of our hearts to the tips of our permanently mangled fingers—THANK YOU!!

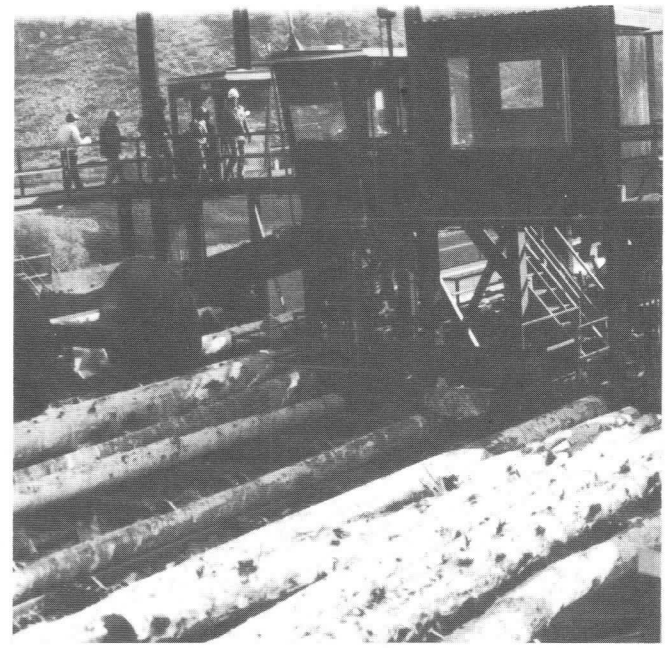
Another studying experience that was thoroughly enjoyed by all who participated, was the night of June 27th. With the stars shining brightly on that crisp, cold evening, most of the student body stayed up the entire night completing the traversing project for Dr. Jungst. With a few "adjustments" in angles and lengths, everyone finally had theirs finished by breakfast. Of course, due to our exhausted conditions, some accidently dozed off in class. Unfortunately, we happened to be in the field at the time. The ground sure was hard when we hit it!

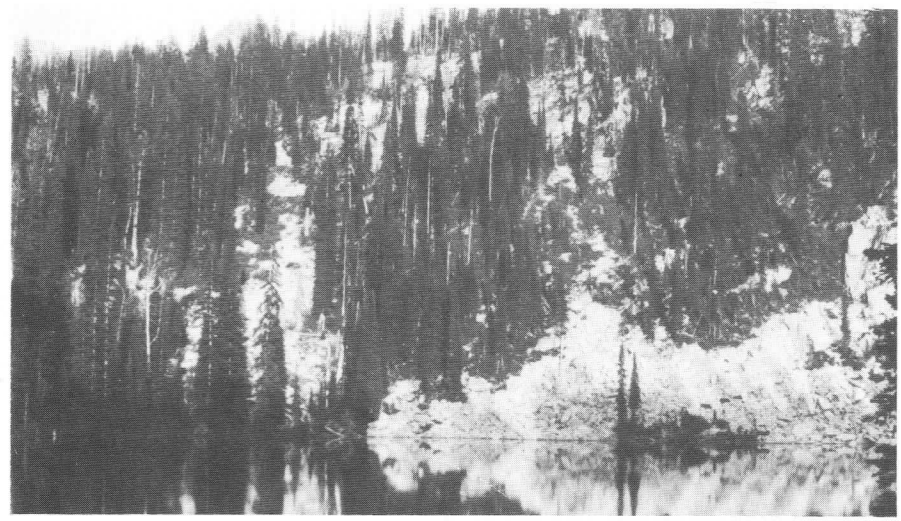
At the same time our instructors were exhausting us, it seems we were doing the same thing to them. This became evident during our tour of the fire research lab in Missoula. During an extremely interesting and stimulating slide presentation, one very (sigh!) weary instructor dozed off. However, due to the privacy act #235-A of the Ames Forester code, we cannot reveal the name of this individual. You lucked out again, Dr. Colletti!

While the time spent in class helped us gain valuable information, our free time was crucial to maintaining our mental stability. Although more than half of this freetime was probably spent completing homework, we did manage to grab a few hours on weekends to "get away from it all". One of the most anticipated weekends that we had was over the July 4th holiday. Camp was almost deserted as we set out to explore the countryside. One group ventured all the way to Idaho in their exploration while most ended up in the Bob Marshall Wilderness Area. The weather was surprisingly beautiful and clear the entire holiday weekend. With our nerves calmed and our minds cleared, we all piled into camp Monday evening, ready to face the few remaining weeks of camp.

On the last night in camp with only finals left to complete, several organized a little entertainment for the benefit of all! "The Last Will and







Testament of Lubrecht" was read and left a small token of appreciation to each and every one of us. After the reading of the will, a small gift was presented to each instructor and to Laura Schilling, our excellent cook.

The struggle for knowledge and experience that, at first, seemed overhwelming, was finally accomplished! As we all gathered outside the mess hall to say our farewells, we suddenly realized that we would now be going our separate ways. Although we knew it would only be a fairly short time before we saw each other again, just the fact that we had completed an exhausting but extremely fulfilling part of our lives saddened us. However, because of both these fulfillments and struggles we have experienced, we can look confidently toward our futures, particularly our futures in forestry. ■

Summer Jobs

The Summer that Almost Never Happened

by Al Wimmer
photos by John Krebs

IMAGINE a "Winter Wonder World" setting in the middle of summer. Sounds inviting doesn't it? That's what greeted me as I drove into the ranger station in Potlatch, Idaho on the Clearwater N.F. However, I knew something was wrong here as I stepped out of my car and onto the carpet of "off-white" snow (???) and a cloud of dust engulfed me. As I watched the people around me walk from place to place, it reminded me of the character "Pigpen" in the Peanuts comic strip. Yes, Mt. Saint Helen had struck and Potlatch was the recipient of over one inch of volcanic ash.

However, I counted my lucky stars and was glad to be there because three weeks earlier, the day I arrived home from school, I received a message saying; "We are sorry, but due to the recent volcanic eruptions, we will not be hiring summer help." This was not a particularly good start to my summer. Anyway, things somehow seemed to work themselves out and I was called back to work as a crew leader of a fire crew for the USFS.

I was greeted by the Fire Management Officer (FMO), John Krebs, and was later briefed on my managerial duties. At first it was hard to picture myself managing a crew. The idea sure had appeal, but it was difficult to grasp because it was one thing to work on a crew and take care of myself, my gear, and my actions, but now I had five other crew members to consider and take responsibility for. The challenge was very exciting and as I reflect back on my summer, it was very rewarding.

The ash deposited by Mt. Saint Helen's eruption proved to be quite an experience in itself. After getting acquainted with my crew, issuing equipment, and settling into our rooms in the bunkhouse for a good night's sleep, I discovered one of the many little surprises that I would have to endure that summer. Do you know what it feels like to crawl in between two sheets of sandpaper and try to sleep? The ash got into everything. It persisted all summer long and clung to the vegetation like cement. The few rains that did occur did not wash it off as you would expect. Instead, it made it cling even more tightly. It did provide brief period of relief from the taste of dust in your mouth and the feel of grit on your teeth. When it did finally dry out, the wind would blow it off and stir it up and restrict visibility considerably, sometimes to less than one half mile. Then it would all settle back into place until the cycle repeated itself.

Working in the timber was also a joy because of the extra protective equipment we were required to wear. We looked like characters right out of "Star Wars" with our black dust masks, goggles, hardhats, sawchaps, etc. strapped on us. It was unbelieveably uncomfortable with it on, especially when the temperature was hot, and it made it difficult to catch your breath. On the other hand, it was even worse without it when we were piling brush and working in the clouds of dust (ash) that resulted from disturbing the ash covered slash.

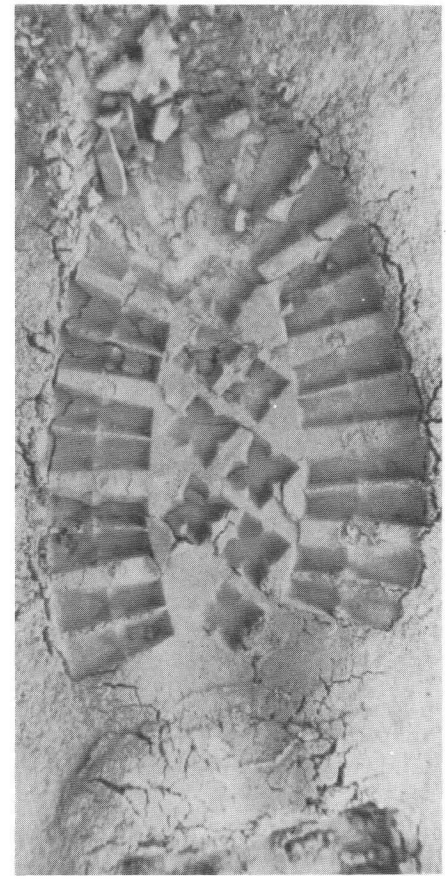
Fires were few and far between this summer. In fact, we were never sent out. I piled brush most of the summer and occasionally recorded the fire weather data and worked in the office dispatching. This served to break up the routine and provided a sometimes much needed break from the field. It was quite an experience and opportunity to observe the various management phases, both in the field and in the office, and participate in the actual planning and paperwork, implementation, and the final completion of work on the site.

One of the biggest challenges I faced this summer was over-coming the anxieties of myself, as well as the crew, to the possibility of getting called out on a fire when bad weather came in. I remember one night in particuar. About 3:00 a.m., a loud crack of thunder shook my walls and I was out of bed and dressed in a minute. I just knew it was a strike (you can just tell) and consequenlty, could not get back to sleep, so I decided to walk down to the office and have a Pepsi. I sat down in the office and listened to the night chatter on the radio. As I sat there listening, I heard the FMO call for the lookout. There was no answer so I keyed the mic and asked if he wanted me to try on the base radio. He asked me why I was down at the office and if there was anything wrong. I explained that I couldn't sleep. All of a sudden I heard a couple of voices laughing on the radio. It turned out that the FMO and my boss, Dick Dudley, and also developed a severe case of insomnia. I was glad I was not the only one with high anxieties.

My job proved to be much easier than I had expected and I attribute this to the fine, hardworking crew I had charge of as well as the friends I had in the office. My crew worked together like a well oiled machine (except, of course, when we had to decide who got to saw and who got to pile brush) and the degree of responsibility of the various jobs we were assigned increased through the summer as we gained the confidence and respect of our peers.

The rest of the staff at Potlatch R.S. must be recognized for their contributions (from the secretaries up to the district ranger) to my first try at a management position. I will never forget all of the friendliness, warmth, help, and support I received from them. It made my work much easier and more relaxed and I believe with all my heart that if you enjoy what you are doing and the people that you work with, you will give 110% of effort back in return. I would gladly put up with all the ash in the world to have the opportunity to work again with the caliber of people that I worked with this past summer.

Well, as all good things come to an end, so did my summer. The challenges had been concurred, confidence had been gained, respect had been earned, and my memories, experiences, and friendships will be with me forever. ■



The Coop and I

by Karen Young

FALL of 1979 rolled around and it was time to think about looking for a summer job. . . . With fate as my guide I attended the Central International Forest Insect and Disease Conference at Devil's Lake, Wisconsin. During this time I was introduced to Dr. David Houston from USDA-Forest Insect and Disease Lab situated in Hamden, Connecticut. Thanks to Dr. Sande McNabb, I managed to sit with Dr. Houston at one of the lunches.

By the time dessert and coffee were served we were discussing the " possibility" of a cooperative education program between ISU and the Forest Service. Many letters later, I found myself driving out to Connecticut for the first of two six month stints. My official job description included: collection of field specimens, establishing and maintaining permanent plots, isolating from field collections, measuring cultural growth, and summarizing and reporting my results.

Little did I know that collection of field specimens and maintianing permanent plots would entail traveling two weeks in Northern New York, two weeks throughout Vermont, and two weeks in mid-northern Maine. It was a great way to see a part of the country I had never been to.

My primary project was a Dutch Elm disease survey throughout Vermont and in Millinocket, Maine. This study was a follow up on a similar survey that was run in 1977. In the late 1960's, researchers in Britain showed that the causal agent of Dutch Elm, *Ceratocystis ulmi* (Buis.) Moreau had two strains, referred to as "aggressive" and "non-aggressive" on the basis of their pathogenicity.

The purpose of the survey was to map the distribution of aggressive and non-aggressive strains of *C. ulmi* in the state of Vermont on the basis of a grid system. The Fall was spent culturing the fungus from twigs with evident streaking. Fungal growth rate and cultural morphology were used to separate the aggressive from the non-aggressive isolates.

I feel I benefited from the cooperative education program. The summer is generally the busy season in most forestry related jobs. Continuing on into the fall gave me an idea of what work is actually like the other 9 months of the year. Upon completion of my coop program, I will have a year's experience with the Forest Service prior to graduation.

For anyone looking for a combined work and education experience, I encourage you to check into the possibility of a cooperative education program. ■

Porcupine Genocide

by Chris Schnepf

MANY people respond with a smile of doubt when I tell them what I did last summer. This reaction is understandable however, since porcupine extermination is not a job often found listed in occupational handbooks.

Last summer I worked on the Paisley Ranger District of the Fremont National Forest in Oregon. The majority of my work involved the elimination of the porcupine from the plantations of that area.

For those who don't know, the porcupine is a slow, primarily nocturnal animal about the size of a raccoon. The reason that it has made so many enemies among the ranks of silviculturists, lies in its seemingly insatiable appetite for the bark of young conifers. Porcupines will take on trees ranging in size from a small seedling, to a good sized sapling, and their feeding usually girdles the tree.

We used two methods to kill porcupines. The first and most effective was night hunting. Porcupines are an incredibly inept animal (they don't really need to be smart or agile, because of their generous supply of defensive quills), therefore, they often take advantage of forest roads for night travel, as an easy way to get around.

The avid porcupine hunter takes advantage of this habit, by driving on these roads at night using two sets of lights. The hunters must keep up a fast (but safe) speed, so that the porcupine will not see them first and head for cover. There are two hunters per vehicle; one drives, while the other "rides shotgun". When a porcupine is sighted, the brakes are applied and the hunter with the gun dashes after the porcupine with flashlight and gun in hand. The slain quarry is then thrown into the back of the truck, for a purpose to be revealed later. A good team can kill upwards of a dozen porcupine in one night using this method, depending on the density of the animals in the area.

The other method of porcupine extermination we used was trap pins. To do this, one cuts four or five 24" logs (each about 2 ft. long) and arrange them in a circle, leaving a space of about 10" between each log. Boards are nailed over the spaces (to prevent deer, cattle, and raptors from stepping into traps), with the traps then being set underneath. The preferred bait for porcupines is dead porcupines (from night hunting). If these are not available, sardines are used. One of the problems with the traps was the occasional catch of non-target animals. I pulled everything from chipmunks to turkey vultures out of the traps and one day I had a confrontation with a badger (he was rather perturbed). This problem was reduced to nearly nothing however, when we started using conibears (body hold) instead of leg hold traps.

All and all I enjoyed my summer job immensely. Plantation protection didn't take up all of my time and I gained experience in a variety of areas including: traversing, timber cutting and TSI boundaries, defoliator and animal damage surveys and a weeks worth of fire fighting training at guard school. Perhaps even more valuable was the experience I gained in the more basic areas of forestry like orienteering, the use of fire maps, mountain driving (both in pickups and three wheeled Atc's) and the use of aerial photos. ■

The Paisley Gang

by Marietjie Burger and Brent Foster

THE summer of '80 was full of new experiences for all the "Paisley Gang from Iowa State. The "Paisley Gang" jobs on the Fremont National Forest varied from porky hunting to timber presale. The people involved in their jobs are as follows:

Chris Schnepf, alias porky hunter, and Kevin Martin had jobs keeping them stationed in Paisley. Kevin's job ranged from fence building crew boss to wildlife inventory during the last part of the summer. Chris' job on the other hand, ranged from the expertise of night porky hunting to odd jobs involved with wildlife timber and silviculture.

The remainder of us, Al Weber (Weeber), Eric Schmidt, Joyce McClure, Brent Foster, and Marietjie Burger, plus 2 locals made up the Timber Presale Crew.

Our first impressions as we approached Paisley (population 290) were: "Are we cruising sage brush and juniper!?" Is this really a town or just a mirage?" But these impressions changed quickly after meeting the people at the Ranger Station, and being told that there were indeed trees on the other side of the mountain, we just had to find them.

Our first week was getting settled into our duty station, Skull Creek Work Center, an hour from Paisley. Skull Creek is an old logging camp in a picturesque setting, a creek flowing through a grassy meadow surrounded by large Ponderosa, Lodgepole Pines and White Fir. The camp included 2 bunkhouses, a bathhouse, a gas house and a large cook house. The first week found us doing a lot of cleaning to make it habitable, making it more fun was finding out there was no electricity and that our well water was undrinkable. After the initial shock, it became known as home, giving us our name for the summer, The Skull Creek Crew.

A day of First Aid Training and a week of Fire School early in the summer helped make the adjustment to our new jobs and the town easier, by meeting the Forest Service people and workers our own age.

Our first sale area, Toot Lodgepole, set the stage for learning how to traverse, cruise, and mark individual trees for presale appraisal. Our presale supervisor spent a lot of time and patience on this first sale answering our questions and teach-

ing us the trade of presale forestry. After learning the basics, much practice, and a little supervision we continued onto other sales.

Our work schedule was four 10 hour days, thus giving us three days of leisure. These were used to explore the sites of Fremont National Forest, the state of Oregon, the coast, Northern California and having fun with our new friends. Our local weekend happenings included volleyball, basketball and softball at the local high school, which may be followed by a visit to the swimming hole, trips to Lakeview (an hour from Paisley) for dancing country western, and a delicious Iowa pig roast.

For the most part we came back with new friends, new ideas, and new knowledge from a fulfilling summer. So if ever in Oregon, stop and visit the Pioneer Pub and Ralph at the Paisley Mercantile and say "hi" from Iowa State. ■

Diversified Forester

by Dave Vales

EVEN with two majors, it is not always easy to land a job which fits the one that is wanted, complete with the glamour of working outdoors. I was stuck at home while working as a seasonal naturalist and fisheries biologist for the Forest Preserve District of DuPage County in Illinois.

Some of the forestry related activities of my job included removal of trees on a soon-to-be reestablished natural prairie, and renovation of a nature trail. However, there were times I chose not to devote my work to forestry and was content to be the ever admired "Forest Ranger" in the public eye. This was accomplished by filling in as interpreter at our nature center, conducting nature hikes, and presenting outdoor career programs to high school classes.

The FWB aspect came when I spent time caring for wounded, sick and young wild animals at the wildlife haven. The biggest project all summer was determining whether the county should spend $150,000 to dredge a lake or not in an effort to improve recreational fishing and control aquatic plant problems. Other fishery work included consulting private pond owners on techniques to improve their fisheries and writing up a complete management proposal for the pond.

The job was not spectacular in terms of the environment to work in, but the learning experience was invaluable. There are many non-forestry related jobs which relate to the outdoors available to those who either cannot obtain a forestry job, or do not want one. Small governmental agencies are a good place to work if you desire a lot of responsibility and yet freedom. ■

My Army Job

by Jody Nelson

I AM in the Outdoor Recreation curriculum with a minor in Resource Management and my work experience of summer 1980 was directly associated with my major. From June 15 to August 30, I was Park Aid for the Army Corps of Engineers at the Clarence Cannon Management Office out of Monroe City, Missouri.

The experiences I gained while I worked as park aid helped me to decide that forestry was definitely my field. Aside from the confidence I gained in myself and my ability to handle any job put to me was the knowledge I gained in dealing with people in various situations.

There were three aids working at Cannon and between the three of us we were responsible for giving campfire programs every Saturday night to the campers, which consisted of either putting together a slide presentation, using a film that the office had ordered or doing some form of play or dialogue. On Sunday mornings we gave nature hikes to the campers on some environmental topic and on Sunday afternoons we worked on the Dam Overlook answering people's questions on the construction of the dam and recreation areas.

When I wasn't racking my brain for ideas for the campfire programs and nature hikes, I was kept busy with other jobs. I helped construct a nature trail, filled brochure boxes, took traffic counter readings, previewed films, cataloged slides, gave programs to the general public, gave tours around the project, helped design a brochure, plus worked in the office answering inquiries, typing reports or whatever needed to be done. I also was required to take a CPR training course.

To sum it all up, I must say that my summer in Missouri was truly rewarding and I only hope I'll find a similar job when I graduate. ■

Student Articles

The Mountain Pine Beetle

by Joe Bornong

MY fellow pine trees: We are gathered here today to mark the passing of our comrade-in-limbs, Fred Lodgepole. Not all of you may have known Fred. He lived on the north edge of our forest, and being as attached to his birthplace as he was, he didn't get around much. But, upon his passing, he left me a message which I feel I must share with all of you. It seems that Fred's passing will mean more to us than the loss of an individual member of our community, more than a new hole in the canopy available to our offspring, more even than the return to the soil of a few borrowed nutrients. Indeed, his death stands out as a sentinel, warning us of the probability of more death to spread throughout the forest. You see, Fred was the victim of that most dreaded of all maladies to afflict our genus in this area, the mountain pine beetle, *Dendroctonus ponderosae* Hopk. (= *monticolae* Hopk.). In the twelve months between the time Fred felt the first beetle successfully camp out in his cambium and the day he cashed in his chips at Hoerner-Waldorf Paper Co., he kept a notebook of observations of his attackers and requested that I relay this information to all of you so that we may become familiar with the appearance and behavior of our nemesis, the symptoms we may expect to encounter if attacked, and some things we may be able to do to avoid the ravages of an epidemic."

The Notes of Fred Lodgepole

I opened my stomates to the twelfth day of July as I did to any other day, stretched my parenchyma a little, and then stood still. Until a little after noon, not much happened. Then, I felt a prick in my bark. I knew that this was no lost Vermonter mistaking me for a suger maple when I felt the mandibles of an insect cut through my inner bark and into my sapwood and then commence to chew a gallery up my grain. I guessed immediately that this 4 to 7.5 mm long, stout, black, cylindrical beetle was the very same mountain pine beetle whose infamy was well-known thoughout much of the western United States and Canada (Furniss and Carolin, 1977). At first, I remained calm, but no matter how hard I tried to pitch the little devil out, it continued its upward course. Soon afterwards, I detected the entrance of another beetle into the same hole. from the display that followed, I surmised that one was female and one was male, but I refuse to repeat the disgusting details here. Over the next three days, the femle plunged into the construction of the gallery. I also detected some internal changes, as the muscles she had developed for flight degenerated in favor of increased reproductive system development (Reid, Sept. 1958). On the fourth day, elongation of the gallery was accompanied by boring of egg niches off either side of the gallery. Eggs were laid in about equal numbers on alternating sides of the gallery (Reid, Sept. 1958). Forty-five larvae emerged a few days later in this gallery. In other galleries which I was later to host, forty to sixty eggs were produced by a single mating, but no definitive limits could be set (Reid, Sept. 1958). Since the same female is capable of laying two or three broods in a season depending on length of the summer season, there is potential for very rapid expansion of a population (Reid, Sept. 1958).

The larvae had white to greyish bodies with brown sclerotized heads, and they soon started to carve feeding tunnels at right angles to the main gallery. Winter approached with the larvae preparing to overwinter in the last of their four instars. I hear that in that respect, I have an average brood, although some of my southern California relatives report that development of two full generations and a partial third would occur in one season there, while summers farther north are short enough to necessitate two years of development to complete a single generation (Furniss nad Carolin, 1977). By the first snow, I had many galleries filled with larvae, and some of my neighbors began to comment on how yellow my leaves looked. I tried to reassure them by saying that I was just tired.

When spring arrived, however, I knew that the end was near, as my several symptoms were very far advanced. Even I was shocked to look at my reflection in a nearby lake. Pitch tubes dotted my flank from near the ground up to my middle branches, and red boring dust stuck in my bark crevices and lay piled around my roots (Furniss and Carolin, 1977). My leaves, even the few new ones, were red. Internally, my sapwood, which a year before had functioned at a moisture content of about five times that of my heartwood, had dried to the same level or below that of the heartwood (Reid, 1961). I also noticed for the first time that the blue stain fungus *Ceratocystis montia,* whose spores had entered with the original beetle attack the previous July and which would leave again with the new brood to follow the beetle wherever they go, had deeply penetrated my sapwood (Carey and Wilcox).

As I counted my last days, my only hope was that I could benefit my fellow pine trees with what information I could collect concerning the beetles. In July, after several weeks of warm, dry weather, I felt the emergence of hundreds of black adults, borne by the wind to attack my neighbors. I wanted to spread something good as well. I had a wealth of other tree's experiences on which to draw; the beetle is epidemic on at least one of its principle hosts almost every year (Furniss and Carolin, 1977); plus I had my first-hand observations of individual insects. There are several factors which can make a stand particularly susceptible to major destruction, and

continued on page 64

The Memoirs of *Juglans Nigra*

by William E. Cambridge

HARD times?! You think you have hard times now? Why, back in the 30's, those were the hard times. I remember it like it was yesterday. I was just a young tree at the time, but it's something I'll never forget. It was the fall of 1935, about October I'd say, when IT hit. The dreaded Walnut Caterpillar!, *Datana integerrina.*

I'd heard rumors about this demon, but they were so few and far between that I thought nothing of them. I first noticed it early one morning, (I was "up with the sun" in those days), down on one of my lower branches I saw all of these first instar larvae. There must have been at least 300 of them. They were green with black heads and thoracic shields. The body hairs were there but were very inconspicuous. They were all feeding together in one large mass, but they were only feeding on the upper layer of cells from the top of the leaves.

In about 3 days these first instar molted, leaving their skins webbed enmass onto the brown, dead leaf they started on. When all the larvae had molted the second instar larvae moved onto my next leaf and started eating the whole leaf, leaving only the midrib and petiole. They molted again in four days. They fed for another four days, then moved down on the branch onto my trunk and molted into the fourth instar. During this time I had a chance to look over myself to find that the first three instars had destroyed almost 2.5% of my leaves on that branch, which didn't worry me too much, but when the fourth instar larvae emerged they moved up my trunk to a higher branch to feed. They fed for four days, each larvae eating 1½ leaves, destroying an addiitonal 11% of my leaves.

They finally moved down onto my trunk, but when they emerged I really got scared, they spread out all over me, about 1 per leaf, and they were getting big too. They were about 2 inches long and had a black body with longitudinal yellow stripes along their sides, and they were entirely covered with long, white hairs. It kind of tickled when they crawled, but it was really starting to hurt when they ate, which they did most of the time. By the end of four days they had almost entirely defoliated me. I was lucky that it was late in the season, but I still lost some growth. I was very happy when they all crawled down my trunk and scattered in all directions, going into the ground to pupate at a depth of from one to three inches.

I was pretty scrappy in my day so when spring rolled around I put on a lot of vigorous, new growth. It was quite a beautiful spring until this pesky moth started to fly around me in late May. It was a light reddish-brown. The front wings were darker than the second pair and had five dark brown traverse lines, and a spread of about 2 inches.

It went away in few days and I didn't think anymore of it. Then one night, this crazy coonhunter came around, you now the type that wears a cap that says, "Coon hunters do it all night." Well, anyway his stupid dogs were barking at some nonexistant coon that they thought had climbed up me. When the hunter got there and shined his lantern up into my crown there was of course no coon, but I did see something that startled me. There was a cluster of at least 800 eggs under a leaf on a branch about 10 feet up. The eggs were pale- green to blue-gray and their white caps shone in the lantern light.

Well, where did these come from? I asked myself. Then it hit me, they must have been layed by that moth. I wondered what type of eggs they were and in about a week I found out. They were those damned walnut caterpillars. They went through their entire generation again. Since I had grown quite a bit they did not kill me, but they sure did stunt my wood ring growth. I was lucky that I wasn't producing a large crop of nuts. I was starting to worry about being attacked by the flat-headed borer, but their population was low in my area that year so I guess I lucked out.

They were gone by July. I had lost a lot of leaves, but I grew more back in July, August, and September. They hit again in September and I thought I was a goner but I pulled through it okay and prayed that they wouldn't come back again in the spring.

Well it didn't work. Come May there was that pesky moth again, I was getting good at recognizing it by now. I really tryed putting on some growth now, preparing for the worst, but after 7 days the larvae never appeared. I took a closer look at the eggs and saw that they were all riddled with parasites. They weren't going to hatch. From the rumor I heard all the eggs in the area were infested with *Telenous ichthyurae*. I was saved! I went on that year to produce my biggest nut crop ever.

Today walnuts are more intensively managed in this area so my manager and his associates have developed several methods for controlling walnut caterpillar. For small trees in small plantations, the best control is to remove the egg clusters and colonies of larvae by clipping off and destroying infested twigs. I wouldn't really like it to be done to me but it is better in the long run and it's definitely better than torching the larvae while they are till crawling on me. The infested area should be clipped early because of the way the fifth instar larvae spread out, making control more difficult.

For large trees like me and large plantations, where it is impractical to remove eggs and larvae, chemical control may be necessary. Insecticides should be sprayed on larvae as soon as they appear. Malathion, Sevin, and Guthion are registered for use on me. But I only allow it if you read the label carefully for dilution rates and methods of application. I hope that my manager can develop a way to introduce that parasite to all of us walnuts as a natural control. I owe my longevity to it. Just last year my manager took an increment from me at about 1 foot off of the ground. I heard him say that I was nearly 70 years old. Then I heard him mention something about veneer, what ever that is. Say, what's that loud buzzing noise? ■

Bibliography

Culter, B. L.; M. K. Harris. 1979. Foliage consumption and damage by the walnut caterpillar on pecan in Texas. J. Econ. Entomology. 72:315-318.

Farris, M.; J. E. Appleby. How to identify and control the walnut caterpillar. N. C. For. Exp. Sta. For. Serv. U.S.D.A.

Harris, M. K.; G. A. Prince. 1977. Egg parasites of the walnut caterpillar in Texas. Southwest Entomol. 2:170-178.

Hixson, E. 1941. The walnut Datana. Okla. Agric. Exp. Sta. Bull. 246:1-30.

Forester's Philosophical Itineracy of a Mountain Pine Beetle

by Skip Sivertsen

MY fellow Dendroctonuns, I stand here on this forest edge today to open your eyes to the moral decay which is rotting the foundations of our population. You are in the midst of an ethical deterioration which is a disgrace to your descendants! Where is your honor? Where are the traditions laid down thousands of years ago by your forefathers?! Are you not of the lineage of *ponderosae*? Have we not been blessed as the old canticles promised? Remember the excerpts when they spoke long ago. . . .

. . . "I will bring you out of the trees of resin, and I will bring you to a land flowing with phloem and cambium. . . .

But lo, in these days, some are breaking the customs of our ancestors, feeding on the upper bole where the size and density of the resin ducts increase. Some have chosen to attack young trees, where the resin flows heavy even at the root collar! Their punishment will come and their foolishness rewarded; for the day is near when they will be excluded. Adults and eggs alike will be surrounded by resin, and they will gnash their mandibles and weep as they perish.

Some endemic groups have decided to place their galleries in more resistant trees. I say woe to them, for they will be crushed by strong exudation pressures and poisoned by strong chemical components. They are doomed through their blindness, for they ignore the prsence of the resin impregnating the gallery walls.

Be patient. Wait for epidemic populations to come about. Why must we stray from what we know to be true? Do as our forefathers discovered; when the resistant tree is finally attacked, concentrate, and intensly hit one specific area.

Do not be deceived by those claiming to know of the deeper truths at higher elevations. Has not the cooler temperatures caused many of the generations to require two years to complete the cycle? Many of your friends have died in that time. And at these heights have not the late establishment of eggs caused even more mortality? May I be tosssed into a sea of DDT with a resin stone around my thorax if I haven't spoke the truth!!

Many are mourning over the lossed eggs, and I wail with you. But some cry out of injustice! I will shed tears but is it just to judge our maker? For who is greater than he? Remember the words spoke in the passages:

—in the beginning, the creator made an egg. And from this egg, a white larva emerged within a few days, and excavated feeding tunnels at right angles to the egg gallery. Time passed, and the larva constructed a pupal cell. It was in this cell that the larva could survive, knowing that the other stages would not survive. The larva pupated and the adult emerged in the spring, taking advantage of cracks and holes in the bark to come forth. The adult was rather stout and cylindrical, 4 to 7.5 mm long and black in color. Then the adult became lonely. But the creator saw the sadness and provided a mate. By July and into August, the beetles began excavating a gallery along the grain of the wood. Perpendicular galleries between 30-90 mm were constructed through the inner living bark, engraving both the bark and the wood. A crook was formed at the bottom of the gallery 25-50 mm in length. The eggs were deposited in niches, singly on alternate sides. An thus a new generation was formed and the creator sent them forth to the lodgepole; the western white; the ponderosa; the white bark; the sugar; and many other pines; and it was good.—

So, did you give life? Were you not created in the same way? Accept what has happened, for no injustice has occured.

Do you still have any doubts of our forefathers righteousnous? Do not the pitch tubes and red boring dust throughout the forests display our prosperity? Do you need to attack more than the lower meter of the trunk and up into the middle branches?! We are in a time where we should be rejoicing! The humans have vanquished the raging fires which once limited our numbers, and even have provided National Parks for our feasting pleasures. When have you seen prime stands of 60 year old and older mature and ripen as today has allowed?! Can you not sense the wood volatiles of those large diameter trees at this very moment? Never has there been so much slash sweetening the air! We even have our past brood logs to raise our own young. Is this not prosperity?

In this joy, I ask you to be grateful to our companion the fungus. For we are mutual allies of inseperable nature. As long as any one can remember, they have stressed our hosts by clogging the conductive tissues. Spreading their lovely blue strains may take place after only 40 days. They may even go as far as to girdle the tree and ask only to travel from place to place as our friends. Truely we are blessed. As our ancestors once said;

—early to vector, blue stain rely, makes the host orange by mid-July—

—Happy is the beetle who feeds on the stressed, injured and down; for rich phloem will be harvest—

—Successful is the beetle who vectors the fungus, for the forest shall he inherit—

I believe you are strong, but I must convey this warning: Beware of the humans, for they are predators. Be like eggs to evil, but be mature in the ways of the pine. They have led many of our beetles away, sending them lusting after false pheromones, and consuming their bodies in the flames. Be strong, and do not let your desires of hunger and lust befall you!

Haven't the humans always tried to eradicate our race?! Do not be fooled!! When humans are around, "a beetle and his slash may soon be parted". They have often burned or sprayed toxic chemicals on both fallen and standing trees. I have even seen the monsters harvest trees before the brood emerges! So I say be careful, for even though their methods have had minor effects on our attacks, they wish to see each one of us suffer.

Humans are not your only foe. Beware of birds bearing pointy beaks, for the woodpecker will consume you. There are many insects which are jealous of your prosperity. So do not be tricked by their deeds; the red-bellied clerid and the bark beetle predator (*Coeloides brunneri*) are two specific examples to be wary of. Also, do not let the wood borers into you home, for they plan to steal your food and space. Several bacteria, fungi, and virus also compete with your life style, so be cautious.

I will try and visit you once again, but I am old. Remember the traditions of our ancestors. Change when you are stressed but keep the passages of old in mind. Our generations are rapid, and often large, so we will

continued on page 64

Unsuccessful Ornamental White Birch

by David L. Cox

AS the chain saw rips from me the last moments of life remaining, of which the foreign causal agent has not taken, my life flashes before my eyes. Life started as a seedling raised in a nursery in nothern Minnesota. After several years, I grew to the height of 3 feet tall at which time my roots were pruned to encourage thicker, shorter, root growth. The following year the nurseryman carefully dug me up, removed excess soil from my roots, and fit me into a crate along with the other white birches of the same age and size. After many hours of riding in a truck that apparently lacked shock absorbers, the top of the crate was opened and we were finally able to see light.

The long ride made me very thirsty and tired so a man that had unloaded us placed my roots in a container of water (sigh!). As my roots were refreshed, I watched the man set other birches into pots, filling the pots with fresh soil. Finally, I was next in line. He measured to see if my roots would fit into the pot he had selected. I had really grown and developed good roots the year before so my roots were too long and plentiful to fit into this pot. The man reached into the back pocket of his OshGosh overalls for pruners (my stomates froze with fear) and proceeded in cutting at least ⅓ of my roots to make them fit into the pot. Then he filled the pot with fresh soil, drenching it with water.

I was placed among other relatives of the same age and size. Looking about me, I could see a sign that read "Marshalltown Landscaping, Iowa's #1 Landscaping Nursery." I remained in this location where for the next two months, I experienced a great deal of stress. Little water was available to drink and the hot summer sun kept heating up my bark. I just couldn't produce enough foliage to effectively shade myself from the sun. The dark colored pot also absorbed the sun, warming up my roots to unbearable temperatures due to heat transfer.

One day someone came and picked *me* out from among the other birches and I was loaded in an upright position onto the back of his pick-up. By the time we reached the place where I am planted today, the wind had burned my leaves causing the stomates to close very tightly. I was unloaded, the plastic pot was removed, and he placed me into a hole that had been dug right next to the eaves spout that extends from the roof on the south side of the house. The man then mixed peat and soil together and flled in the area around my roots. I was fertilized and watered and very happy with my new home!

Summer came to an end and winter was fast approaching. The winter months seemed much less severe here than in Minnesota where I had grown up. Winter was also not as long either—it seemed like winter was here and gone and before I knew it springtime and the warmer winds came upon me.

One great sunny day my homeowner, George, was talking to an Iowa State Extension entomologist (I could tell by his jacket) on the patio which is next to me. I cranked open my stomates so I could leaves-drop on their conversation. The entomologist said that I was at a "home away from home" where I wouldn't grow as well as I would have in northern Minnesota from a seedling. He went on to explain that because this was not my native home, I would be more susceptable to stress, and insect attacks. The bronze birch borer was the main insect that would attack and as I grew older, stress would become a serious problem. Unless carefully controlled, the bronze birch borer, *Agrilus anxius* Gory, would kill me. My homeowner then asked the extension entomologist what were the best preventive measures. The entomologist explained these to him and the last thing I heard was my homeowner saying, while shaking the entomologist's hand, "I will do all those things you have mentioned to prevent attack on this beautiful birch tree of mine." I sighed with relief thinking that I was in "good hands."

The spring rains came and gave me a good chance to establish my root system. Early in the spring, George fertilized me which provided me with a good supply of nutrients to grow new branches and leaves. But as it rained, I was unable to absorb oxygen because of the excess water that drained from the eaves spout. This water drained off the roof, down the eaves spout, and right onto the ground above my roots where it sat there until it either soaked into the soil, or ran onto the patio. This upset my metabolic system causing me to become ill (stress) because the oxygen I critically needed to take up in my roots was limited. I eventually grew out of my illness as the days wore on and the rains ceased to come as often.

When summer came I had grown rapidly, attaining a height that was a few feet higher than the house. This allowed me to see everywhere around the area. One day I was surveying the neighbors yard and about 50 yards away was a tall and beautiful white birch tree just like me except a lot older. As I focused for a closer look (she was quite attractive) I could see that some of the limbs in the upper crown of the tree were dead. My curiosity arose (even more) of what could be causing the dieback, and if that could eventually happen to me. All I could do, I guess, is wait and see.

Impatiently I awaited fall, looking forward to the cooler period instead of the hot summer, and because the pests that liked sitting and feeding on my leaves and/or bark would be nearly non-existant. Fall finally did arrive, and I began producing abscisic acid which caused my leaves to fall and prepared my system for the winter months that lay ahead.

Several cycles of seasons occurred and I grew steadily older. I noticed that the white birch next door was dying back more each year. I, too, seemed to become ill for longer periods of time now. Greenish-bronze colored beetles slightly less than 3/8" to 1/2" in length (really rather pretty little pests) were feeding on my leaves. My leaves were not affected detrimentally and I could still obtain energy from the sun. I just didn't like the thought of having an insect (no matter how pretty) crawling around and using my leaf as a urinal and/or area for fecal deposition.

It was approximately five years

continued on page 64

Mountain Pine Beetle
continued from page 60

I am worried about this stand. The worst part is, some of the factors cannot be manipulated by you or by the foresters in the area. For one, we have had several mild winters in a row, and this has contributed to maximum brood survival (-----, 1981). Also, national economic conditions have hindered the Forest Service's main preventive technique, selling and cutting overstocked, mature stands like ours which are primary targets for beetle attack. A recent decline in the housing market has resulted in a lag in cutting (-----, 1981). Other direct controls are limited in effectiveness. Disposal of attacked trees, by felling and burning or peeling, have proved uneconomical (Furniss and Carolin, 1977). Oil-based chemical sprays have proven effective at killing beetles under bark, (Gibson) but cost and labor requirements reduce their desirability. Biological control agents include woodpeckers, several predacious and parasitic insects (Furniss and Carolin, 1977), and at least seven species of nematodes (-----, 1958). These, too, are limited in effectiveness. Predator and parasite population build-ups lag behind beetle increases, so considerable damage may be done before full force of beetle killers is exerted. Also, once an epidemic gets rolling, "a bird can eat only so many beetles and there are billions of them," according to Ken Gibson, a Forest Service entomologist (-----, 1981). considering that thinning of younger stands and sale of older prime stands may be hindered by a lack of funds and a lack of buyers, if I wasn't dead, I'd be worried. With this, I leave this earth knowing that some of my neighbors will soon follow me to the great wilderness in the sky, where there are no chainsaws or campers with washlines to hang, but consoled with the hope that this report may benefit most of you and contribute to management of the mountain pine beetle.

Bibliography

Carey, Paul P. and William R. Wilcox. Disaster to opportunity. Colorado State Forest Service Leaflet, Colorado State University.

Gibson, Archie L. June 1943. Penetrating sprays to contorl the mountain pine beetle. Journal of Economic Entomology 36 (3): 396-398.

Reid, R. W. 1958. The behavior of the mountain pine beetle during mating, egg laying, and gallery construction. Canadian Entomologist 90: 505-509.

Reid, R. W. 1961. Moisture changes in lodgepole pine before and after attack by the mountain pine beetle. Forestry Chronicle 37: 368-375.

Reid, R. W. 1961. Biology of the mountain pine beetle: I. Life cycle, brood development, and flight periods. Canadian Entomologist 94: 531-538.

Reid, R. W. 1962. Biology of the mountian pine beetle: II. Behavior of the host, fecundity, and internal changes in the female. Canadian Entomologist 94: 605-613.

Reid, R. W. 1963. Biology of the mountian pine beetle: III. Interaction between the beetle and its host, with emphasis on brood mortality and survival. Canadian Entomologist 95: 225-238.

Strable, George R. and Phillip C. Johnson. June 1955. The mountain pine beetle. Forest Pest Leaflet 2, U.S. Department of Agriculture Forest Service.

_____. Feb. 17, 1981. Forest hold high interest for beetles. The Des Moines Register, p. 1.

_____. 1958. Nematodes associated with the mountain pine beetle. Canada Department of Forestry Bi-monthly Progress Report 14 (1).

Philosophical Itinerary
continued from page 62

prosper over our hosts and hopefully over our competetors. ■

BIBLIOGRAPHY

Amman, Gene D., and McGregor, Mark D. 1977. Guidelines of reducing losses of lodgepole pine to the mountain pine beetle in unmanaged stands in the Rocky Mountians. USDA Forest research station notes. Station 36.19 p. Ref.

Berryman, Alan A. 1976. Theoretical explanation of mountain pine beetle dynamics in lodgepole pine forests. *Environ Entomology.* 5(6): 1225-1233.

Guenther, J. D., and Stock, M. W. 1979. Isozyme variation among mountain pine beetle populations in the Pacific Northwest. *Environ Entomology.* 8(5): 889-893.

Peterman, R. M. 1977. An evaluation of the fungal innoculation method of determining the resistence of lodgepole pine to mountain pine beetle attack. *Can. entomology.* 109(3): 443.

Western Forest Insects. 1977. USDA Forest Service.

Unsuccessful Birch
continued from page 63

after being planted in George's yard, that I became deathly ill for nearly the entire spring and summer. Many factors led up to my extended stress condition. It rained excessively that spring which made the soil around my roots saturated continuously with water. Therefore, I wasn't allowed to get a good start of nutritional sap flowing through my phloem resulting in a stress condition and little growth production. As a result of the excess rainfall, soil had washed from under the drip line of my crown and collected on the patio. A little gully was created so George decided to fill it in with soil. He over-estimated (of course) the amount of soil he needed so he spread the rest on the ground under my crown to divert the water that might drain from the eaves spout. The amount of excess soil was about four inches on top of the original ground line. This my surface feeder roots disliked drastically! It also resulted in additional stress on me.

When summer came I was beginning to feel a little better. I noticed that the neighbor's birch tree limbs (she doesn't mind my notices) had died back even further. Now only half of the crown was living and the other half looked almost dead.

One bright and sunny day in June (around mid-summer) George decided to trim back my branches that had grown out over the house and the low ones that the kids were climbing on. He did a quick, neat job and with very little pain being inflicted upon me. Unfortunately, he forgot to apply a pruning seal to my open wounds so I had to try and close these wounds by exuding excessive sap. About a day later, I noticed that insects were being attracted to the sap and some of them were those greenish-bronze beetles that had previously eaten on my leaves a few years ago. As the month of June progressed, more and more of these beetles were feeding my leaves.

One day I heard a chain saw and not to my surprise the neighbors were cutting down their white birch that was either dead or nearly so. Because I am so closely related to the weeping birch, I wept for awhile to pay my tributes to one of my own kin. By this time (July), most of the birch beetles were moving about on my leaves and bark as if it was the noon rush hour in a big city. The female birch beetles' location depended on their situation. The females in the leaves (being less conspicuous) were looking for a sensual partner that would "love 'em and leave 'em alone." Some were even walking the midrib (midway) to draw attention to themselves. Those females that had mated were looking for wounds and crevices in the bark in which to lay their eggs. Besides the wounds caused by pruning, there were wounds from the riding lawn mower banging into me and from the kids carving their names in my trunk.

After almost a week, most of the beetles were gone. Then another week later, a queer feeling occurred all over my bark (branches, twigs, trunk) as if someone was doing acupuncture on me with dull needles.

With the excessive heat from the sun and the attack of the larvae of the bronze birch borer adult, my respiration increased, and the sap in the phloem increased in the volume of flow.

My respiration remained high for several days and the phloem was flowing excessively, trying to drown the larvae. The drowning worked, killing most of the larvae and ceasing the painfull puncturing caused by the larvae. A select few must have survived the drowning because I could feel something chewing and moving between the bark and wood, leaving remnants of deposition in its gallery. It felt as if something was crawling on your skin just beneath your clothing, biting and chewing along the way.

Because of the pain and stress, I was in from early spring through summer, the fall seemed slow in coming. The larvae were preparing to over winter in a boat-shaped depression carved into my phloem. As they dug deeper into the phloem, I wished that, in the boat they made, I could set them a-'sailing just to remove them from me.

As winter progressed, the larvae's damage from winding back and forth forming feeding galleries in the phloem caused a slight girdling effect. It is difficult enough just to get sap to my outer twigs and branches in the winter time without any birch boring, side-winding, sap-stopping, flatheaded son of a birch larvae contributing to the difficulties! Their presence in and destruction of the phloem tubes reduced the efficiency and the amount of sap I could get to the upper crown of twigs and branches. I had a numb feeling in the outer crown twigs and branches. My terminal buds would not be viable for next spring's growth.

Spring came as usual following winter. Rains were fewer and my roots didn't have any problem getting sufficient oxygen from the soil as was the case in previous springs. My leaves were starting to unfold from the buds on limbs that hadn't died over the winter. Most of the dead twigs and branches were in the upper ⅓ of the crown. I started new phloem tubes over the top of the larvae galleries damage. This resulted in ridges, similar to a double chin. I had a good start in recovering from last year's stress.

In late spring (around the last part of April or early May), I sensed a little movement in the boat-shaped depression made by the larvae last fall. Quite soon after I felt this movement, it stopped. The "larvae" must have gone into pupation.

One day, the neighbor came over and was discussing the loss of his white birch tree (sigh). Because they were sitting in their lawn chairs, slurping their tea, directly under me, I leaves-dropped on their conversation. The neighbor (his name was Ralph) was explaining how his tree had died. He suggested that the reason for part of the crown dieback in me was due to the bronze birch borer (I'm sure you know some people like Ralph who don't play with a full deck, although this time he was right about the bronze birch borer causing dieback in my crown). Ralph proceeded in saying that chemical control at this stage of dieback is the only hope to kill the bronze birch borer. George asked Ralph, "What did you do with the birch you cut down?" Ralph said that he was using it for firewood and had it stacked in his backyard. I thought to myself, "What optimal conditions and a perfect spot for the adults to emerge from and descend on me in hoards." George replied, "I think I will cut out some of the dead branches and stick it right here along the house because it makes such a decorative firewood." Well, that was all I could take from those two. Now I know that both George and Ralph are sitting on what little brains they do have.

During the first week in June, George came out and sprayed Cygon on me to kill the emerging adults that were leaving a D-shaped hole in my bark. He sprayed again two weeks later and his effort again killed the emerging adults. But the biggest problem he overlooked was not spraying the birch firewood he had cut from my crown and/or the firewood belonging to Ralph. The adults had emerged from the firewood late thus escaping the earlier sprayings on the tree. About the third and fourth week of June the bronze birch borer adults were thicker than last year at this time.

I knew George was mentally disabled when he bought two house cats earlier in the spring. The cats, when let out of the house, would sharpen their claws on my bark (if only my bark could bark). This provided a perfect place for those egg laying adults of those birch boring, side-winding, sap-stopping, flatheaded son of a birches. The progression of attack was the same as last summer but more severe. Because of such stressful conditions last year and girdling that reduced the sap flow, my means of defense were gone (besides I am getting to be trunk). I became a parasitic host to the bronze birch borer and my existence as a tree was quickly closing in on me.

The winter killed most of my branches and by spring, all that remained was ⅓ of my crown. My bark was becoming yellow, a sign of dead tissue.

Just a few minutes ago, a pick-up drove into the driveway hauling a river birch tree. As my flash back dissipates, I am forced back into reality, faced wtih the inevitable sound of death rushing my lenticels (ears); the chain saw! ■

Literature Cited

Ball, J., and G. Simmons. 1980. The relationship between bronze birch borer and birch dieback. Journal of Arboriculture. 6(12): 309-314.

Miller, R. L. 1972. Bronze birch borer and its management. Cooperative Extension Service. Ohio State University. No. 8.

Ryan, S. O. 1974. Bronze birch borers and their contorl. Cooperative Extension Service. Iowa State University. IC-419.

Schuder, D. L. 1973. The bronze birch borer and its control. Cooerative Extension Service. Purdue University. Publication E-50.

Schwartz, P. H. Jr. 1975. Insects on trees and shrubs around the home. Home and Garden Bulletin. No. 214, 13 pp.

Williams, R. E., and R. B. Neiswander. 1959. Investigations on control of the bronze birch borer and flat head apple tree borer. Journal of Economic Entomology. 52(2): 255-257.

CURRENT FORESTRY STUDENTS AT ISU

FRESHMEN

Baas, Sharon
Independence, IA.
Bader, Curt
Bloomfield, IA.
Bown, Laverne
Reinbeck, IA.
Cain, James
Anamosa, IA.
Callery, Theresa
Lisle, IL.
Carpenter, Stephen
Fairfield, IA.
Clark, Randy
Jewell, IA.
Coyne, Carolyn
Bettendorf, IA.
Davis, William
Brecksville, OH.
Drees, Eileen
Mapleton, IA.
Ffitch, John
Rock Island, IL.
Fink, Tamara
York, NE.
Fouts, Kenneth
Dunlap, IA.
Gaffney, Terrance
Carroll, IA.
Gerken, Frank
Des Moines, IA.
Gillam, Matthew
Marshalltown, IA.
Gillet, Sharon
Corning, IA.
Hayes, Nicholas
Franklin, OH.
Hejza, Kurt
Park Ridge, IL.
High, Rochelle
Iowa Falls, IA.
Hintch, Ronald
Hampton, IA.
Huggins, John
Council Bluffs, IA.
Humphrey, Bryan
Cardington, OH.
Johnson, Richard
Davenport, IA.
Kern, Jerrey
Davenport, IA.
Krommendyk, Dan
Orange City, IA.
King, Barbara
Davenport, IA.
Lippitt, Amy
Rockford, IL.
Lucido, Frank
Des Moines, IA.
Marlatt, Rod
Stanwood, IA.
Montgomery, Joan
Arlington Heights, IL.
Morris, Michael
Shenandoah, IA.
Ohlert, Jace
Andrew, IA.
Riggan, Derek
Orange City, IA.
Robinson, Sharna
Ames, IA.
Rubel, Douglas
Grimes, IA.
Soliday, Joel
West Des Moines, IA.
Struchen, Kirsti
Rockford, IA.
Titus, Kirk
Cresco, IA.
Weinbeck, Mitchell
Peoria, IL.
Wilwet, Patricia
Farley, IA.
Winnekins, Wesley
Freeport, IL.
Wittry, Kevin
Breda, IA.
Wormley, David
Council Bluffs, IA.

SOPHOMORES

Agan, Thomas
Westfield, MA.
Bender, Leslie
Osford, IA.
Berregaard, Suzie
Janesville, IA.
Dowd, Peter
Westport, CT.
Dunsworth, Greg
Davenport, IA.
Goodspeed, Julie
Iowa City, IA.
Hammer, Mark
Des Moines, IA.
Johnson, Bradley
Buffalo Center, IA.
Johnson, Eric
Cedar Rapids, IA.
Kendall, Julie
Ankeny, IA.
Kyhl, Clinton
Waterloo, IA.
Lee, Daniel
Des Moines, IA.
Lynch, Thomas
Waterloo, IA.
Mahoney, Karen
Mason City, IA.
Meyer, Jodi
Stuart, IA.
Miller, Leslie
Ames, IA.
Murphy, Kevin
Oelwein, IA.
Olson, Jerry
Des Moines, IA.
Patton, Robert
Council Bluffs, IA.
Pflug, Matthew
Onawa, IA.
Prestemon, Jeffrey
Ames, IA.
Ridge, Scott
Fort Dodge, IA.
Trent, Robert
Waukee, IA.
Vanfosson, Gregory
Gilbert, IA.
Vaughan, David
Knoxville, IA.
Walsh, Terese
Dubuque, IA.
Walters, Jeff
Guttenberg, IA.
Wells, Donald
Nevada, IA.
Young, Stephen
Des Moines, IA.

JUNIORS

Accola, Lon
Davenport, IA.
Boyce, Wesley
Fairfield, IA.
Bridgeman, Barbara
Ute, IA.
Browning, John
Ames, IA.
Cambridge, William
Glenwood, IA.
Bahr, Gary
Ames, IA.
Fenton, Annette
Cedar Rapids, IA.
Fitzpatrick, Shawn
Lynnville, IA.
Gray, Linda
Des Moines, IA.
Grosz, Donna
Palm Harbor, FL.
Hall, Gail
Winnebago, IL.
Hardy, Alan
Iowa City, IA.
Healey, James
Toms River, NJ.
Kaiser, John
Ankeny, IA.
Kramer, Jan
Strawberry Point, IA.
Leacox, Eric
Bettendorf, IA.
Martin, Michael
Ames, IA.
McCulloch, Mark
Burlington, IA.
McIntyre, James
Des Moines, IA.
Mueller, Frank
Monticello, IA.
Nadolsky, Pamela
Burlington, IA.
Montag, Anita
West Bend, IA.
Nelson, Jody
Manson, IA.
Nummela, Michelle
Hartford, CT.
Peters, Kelley
Monroe City, IN.
Reid, Paul
Muscatine, IA.
Reutzel, Randy
Northwood, IA.
Rinella, Steven
Kenanee, IL.
Schnepf, Chris
Le Mars, IA.
Shaw, Michele
Cedar Rapids, IA.
Sivertsen, William
West Des Moines, IA.
Steig, Debra
Boone, IA.
Vanderpool, Beth
Washburn, MO.
Vandevaarst, Herman
Livingston, NJ.
Wolf, Steven
Monticello, IA.

SENIORS

Aneweer, Rochelle
Stout, IA.
Berger, Gary
Sioux City, IA.
Bigbee, Kurt
Ankeny, IA.
Boots, Steven
Atlantic, IA.
Bornong, Bernard
Davenport, IA.
Bornong, Joseph
Davenport, IA.
Burger, Marie
Ames, IA.
Dicarlo, Daniel
Pittsburgh, PA.
Everson, David
Springville, IA.
Foster, Brent
Mount Pleasant, IA.
Gowan, Daniel
Roanoke, VA.
Gruver, Daniel
Waterloo, IA.
Harker, Daniel
Downers Grove, IL.
Herzberg, Bruce
Creston, IA.
Hildebrandt, William
West Simsbury, CT.
Ho Chun-Hong
Taichung City, Taiwan
Holt, Kris
St. Louis, MO.
Hutzell, Michelle
Dubuque, IA.
Johnson, Klint
Mallard, IA.
Keys, Stephen
Witchita, KS.
Kujinga, Kumbirai
Africa
Licht, Priscilla
New Ulm, MN.
Mallas, Rebecca
Perry, IA.
Maule, James
Mondamin, IA.
Nelson, Dana
Lake Mills, IA.
Mueller, Jo
Dexter, IA.
Parsons, John
Newton, IA.
Peters, David
Brooklyn Center, MN.
Potter, John
Harlan, IA.
Reilly, Shaun
Algona, IA.
Rothlauf, Michael
Burlington, IA.
Sandvik, Mark
Mason City, IA.
Scanlon, Mike
Marion, IA.
Schmidt, Eric
Long Grove, IA.
Schumacher, Steven
Cedar Rapids, IA.
Stall, Duane
Palmer, IA.
Stocks, Phillip
Mount Pleasant, IA.
Thomas, Guy
Council Bluffs, IA.
Vales, David
Elmhurst, IL.
Weber, Alan
Fairbank, IA.
Wimmer, David
Council Bluffs, IA.
Young, Karen
Indianola, IA.